Vincent C. Paquit

CONTACT INFORMATION	Energy Systems Analytics (ESA) Group	*Phone*: (865) 241-1789
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BIOSKETCH

Dr. Vincent C. Paquit serves as the section head for Secure and Digital Manufacturing in the Manufacturing Science Division (MSD) at Oak Ridge National Laboratory (ORNL). Over the past two decades, he has dedicated his efforts to various projects and programs at ORNL, all in support of the Department of Energy's two primary missions: ensuring energy sustainability and enhancing national security. Since 2015, Dr. Paquit has been serving as the Data Analytics Lead for the Manufacturing Demonstration Facility (MDF). His team is dedicated to developing a Digital Platform for Advanced Manufacturing, with the aim of enhancing our understanding of manufacturing processes for part qualification, certification, and process control and correction. To achieve this goal, he manages a team of scientists and engineers working on developing and integrating hardware and software solutions to capture and analyze the digital threads associated with each manufacturing technology present in the facility. Currently, he is at the forefront of the digital transformation of the MDF, with a focus on standardizing manufacturing data collection for scientific purposes. This process involves creating digital twins of components produced at the MDF or collaborating institutions. Data is collected at every step of the manufacturing process, spanning from design, modeling, and simulation to material feedstock, component fabrication, and component evaluation. While this work progresses one component at a time across hundreds of machines, it is poised to ultimately generate the world's largest database and digital platform for advanced manufacturing science discoveries. His vision, currently supported by the DOE Advanced Materials and Manufacturing Technologies Office (AMMTO), is attracting interest from national laboratories, U.S. government agencies, industry, academia, and international institutions. This vision is paving the way toward a disruptive solution for the adoption and deployment of advanced manufacturing technologies in critical applications.

RESEARCH INTERESTS

Additive Manufacturing, Artificial Intelligence, Machine Learning, Signal Processing, Computer Vision, Multidimensional and Multispectral Imaging, Imaging Systems Design

EDUCATION

Université de Bourgogne, Dijon (France)

PhD in Computer Science and Image Processing (Summa Cum Laude)   2008
Département Informatique Électronique Mécanique

- Title: Quantitative Imaging of Subcutaneous Veins with Multispectral Illumination and 3D modeling
- Advisor: Professor Fabrice Mériaudeau
- Co-Advisors: Dr. Kenneth W. Tobin Jr. and Dr. Jeffery R. Price (ORNL)
- Keywords: Biomedical Imaging, Multispectral Imaging, Signal and Image Processing, Artificial Vision, Machine Learning, Monte Carlo Simulation, 3D Reconstruction

M.S. in Computer Science and Image Processing (Magna Cum Laude)   2003
Département Informatique Électronique Mécanique

- Title: Pattern Recognition using Fourier Descriptors
- Advisor: Professor Johel Mitéran
- Keywords: Signal & Image Processing, Electronics, Pattern Recognition, Biometrics

Pg.D. in Electronics and Image Processing (Cum Laude)   2002
B.S. in Electronics, Computer Science and Image Processing (Cum Laude)   2001
Département Informatique Électronique Mécanique, 2001

- Area of Study: Signal and Image Processing, Electronics

Vincent C. Paquit

PROFESSIONAL EXPERIENCE	**Oak Ridge National Laboratory**

Oak Ridge, Tennessee, USA   **August 2004 to present**

I have been working on numerous applied image processing projects at ORNL to support the core missions of the Department of Energy. Currently, I am based at the **Manufacturing Demonstration Facility (MDF)** where I oversee the development of (1) the MDF digital factory; (2) the MDF digital framework for advanced manufacturing qualification, certification, and control; and (3) the Advanced Materials and Manufacturing Technologies (AMMT) digital platform

- *Section Head - Secure & Digital Manufacturing*	**June 2023 to present**
- *Group Leader - Energy Systems Analytics*	**October 2020 to April 2023**
- *Senior R&D staff member*	**January 2019 to present**
- *R&D staff member*	**May 2011 to present**
- *Post Doctoral Research Associate (ORAU)*	**May 2009 to May 2011**
- *Post Master Research Associate (ORAU)*	**October 2008 to May 2009**
- *ASTRO program participant (ORAU)*	**January 2007 to September 2008**
- *Visiting Scholar (UTK)*	**August 2004 to December 2006**

Industrial & Systems Engineering, **The University of Tennessee (UTK)**
Knoxville, Tennessee, USA   **March 2017 to January 2021**

ORNL Joint Faculty Assistant Professor

Applied Physics Laboratories, **The University of Tennessee (UTK)**
Knoxville, Tennessee, USA   **August 2004 to December 2006**

Research Assistant: software and hardware development for biomedical applications;

Laboratoire Électronique Informatique Image, **Université de Bourgogne**
Dijon, FRANCE   **March 2002 to August 2004**

Technology Transfer Engineer: Responsible for program development and technology transfer management at Le2i research laboratory. Technical contributor (software and hardware R&D) on computer vision and image processing project

INVITED TALKS - DIGITAL MANUFACTURING	"In-situ thermal imaging in advanced manufacturing, " Keynote presentation, SPIE Thermosense: Thermal Infrared Applications, 2022

"Panel Topic: Fabrication and Repair of Industrial Gas Turbine Engine Components using Advanced Manufacturing Processes," ASME Advanced Manufacturing Repair for Gas Turbines, 2021

"2021 Japan-American Frontiers of Engineering Symposium," National Academy of Engineering, 2021

"2021 German-American Frontiers of Engineering Symposium," National Academy of Engineering, 2021

"Accelerating Quality Certification of Critical Components with Additive Manufacturing," NRC Workshop Advanced Manufacturing Technologies and Nuclear Applications, 2020

"Artificial Intelligence and Manufacturing: The Power to Make Anything Anywhere Quickly," House Manufacturing Caucus Briefing, 2019

"The Digital Factory: Democratization of Manufacturing Through Hybrid Technologies and the Effective Use of Data," Keynote Additive Manufacturing User Group, 2019

"Integrated Mechanistic Data Driven Modeling for Additive Manufacturing," National Academies of Sciences, Engineering, and Medicine, 2018

"Transforming Manufacturing: The Journey to Innovation," Smart Manufacturing Experience, 2018

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Book Chapter	Shaun S. Gleason, **Vincent C. Paquit**, Deniz Aykac, "Image segmentation," in Quantitative Magnetic Resonance Imaging in Cancer: From Theory to Clinical Applications, 2011
Patents	James Haley, Ryan Dehoff, **Vincent C. Paquit**, Samuel C Leach, "In-situ digital image correlation and thermal monitoring in directed energy deposition," US Patent App. 17/124,569, 2022
	Luke R Scime, **Vincent C. Paquit**, Desarae J Goldsby, William H Halsey, Chase B Joslin, Michael D Richardson, Derek C Rose, Derek H Siddel. "Systems and methods for powder bed additive manufacturing anomaly detection," US Patent App. 16/950,484, 2022
	Amir Ziabari, Singanallur Venkatakrishnan, Philip R Bingham, Michael M Kirka, **Vincent C. Paquit**, Ryan R Dehoff, Abhishek Dubey, "System and method for artifact reduction of computed tomography reconstruction leveraging artificial intelligence and a priori known model for the object of interest," US Patent App. 17/392,645, 2022
	Udaya C Kalluri, Andrzej Nycz, Lonnie J Love, **Vincent C. Paquit**, Xiaohan Yang, Samuel C Leach, Harold Walters, "Method and system for automated plant surveillance and manipulation," US Patent App. 17/237,503, 2021
	Roger A. Kisner, Timothy J. McIntyre, **Vincent C. Paquit**, "Apparatus and methods for imaging interior surfaces of a tube or the like," US10009526B2, 2018
Journal Publications *(Peer-reviewed)*	Zackary Snow, Luke Scime, Amir Ziabari, Brian Fisher, **Vincent C Paquit**, " Scalable In Situ Non-Destructive Evaluation of Additively Manufactured Components Using Process Monitoring, Sensor Fusion, and Machine Learning," Additive Manufacturing, Elsevier, 2023
	Luke Scime, Desarae Goldsby, **Vincent C Paquit**, "Methods for rapid identification of anomalous layers in laser powder bed fusion," Manufacturing Letters, 2023
	Amir Ziabari, Venkat Singanallur, Zackary Snow, Aleksander Lisovich, Michael Sprayberry, Paul Brackman, Curtis Frederick, Pradeep Bhattad, Sarah Graham, Philip Bingham, Ryan Dehoff, Alex J Plotkowski, **Vincent C Paquit**, "Enabling Rapid X-ray CT Characterisation for Additive Manufacturing Using CAD models and Deep Learning-based Reconstruction," Nature Computational Materials, 2023
	Rima Asmar Awad, Muhammad Haris Rais, Michael Rogers, Irfan Ahmed, Vincent Paquit, "Towards generic memory forensic framework for programmable logic controllers," Forensic Science International: Digital Investigation, 2023
	Zackary Snow, Luke Scime, Amir Ziabari, Brian Fisher, **Vincent C Paquit**, "Observation of spatter-induced stochastic lack-of-fusion in laser powder bed fusion using in situ process monitoring," Additive Manufacturing, 2023
	Sujana Chandrasekar, Jamie B Coble, Fred List III, Keith Carver, Serena Beauchamp, Amy Godfrey, **Vincent C Paquit**, Sudarsanam S Babu, "Similarity analysis for thermal signature comparison in metal additive manufacturing," Materials Design, 2022
	Rangasayee Kannan, Gerald L Knapp, Peeyush Nandwana, Ryan Dehoff, Alex Plotkowski, Benjamin Stump, Ying Yang, **Vincent C Paquit**, "Data Mining and Visualization of High-Dimensional ICME Data for Additive Manufacturing," Integrating Materials and Manufacturing Innovation, 2022

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JOURNAL PUBLICATIONS *(Peer-reviewed)*

William Halsey, Derek Rose, Luke Scime, Ryan Dehoff, **Vincent C Paquit**, "Localized defect detection from spatially mapped, in-situ process data with machine learning," Frontiers in Mechanical Engineering, 2021

Amir Ziabari, Abhishek Dubey, Singanallur Venkatakrishnan, Curtis Frederick, Philip Bingham, Ryan Dehoff, **Vincent C Paquit**, "High Resolution X-Ray CT Reconstruction of Additively Manufactured Metal Parts using Generative Adversarial Network-based Domain Adaptation in AI-CT," Microscopy and Microanalysis, 2021

Rui Li, Mingzhou Jin, **Vincent C Paquit**, "Geometrical defect detection for additive manufacturing with machine learning models," Materials & Design, 2021

Luke Scime, Alka Singh,**Vincent C. Paquit**, "A scalable digital platform for the use of digital twins in additive manufacturing", Manufacturing Letters, Elsevier, 2021

Alexander Plotkowski, James Ferguson, Benjamin Stump, William Halsey, **Vincent C. Paquit**, Chase Joslin, Sudarsanam Suresh Babu, Andres Marquez-Rossy, Michael Kirka, Ryan Dehoff, "A Stochastic Scan Strategy for Grain Structure Control in Complex Geometries using Electron Beam Powder Bed Fusion", Additive Manufacturing, Elsevier, 2021

James Haley, Clay Leach, Brian Jordan, Ryan Dehoff, **Vincent C. Paquit**, "In-situ Digital Image Correlation and Thermal Monitoring in Directed Energy Deposition Additive Manufacturing", Optics Express, 2021

Jacob Raplee, Joy Gockel, Sarah Foster,Fred A List III, Keith Carver, Travis McFalls, **Vincent C Paquit**, Rahul Rao, David Gandy, Sudarsanam S. Babu,"Towards Process Consistency and In-situ Evaluation of Porosity during Laser Powder Bed Additive Manufacturing", Science and Technology of Welding and Joining, 2020

Luke Scime, Derek Siddel, Seth Baird,**Vincent C. Paquit**, "Layer-Wise Anomaly Detection and Classification for Powder Bed Additive Manufacturing Processes: A Machine-Agnostic Algorithm for Real-Time Pixel-Wise Semantic Segmentation", Additive Manufacturing, Elsevier, 2020

William Halsey, James Ferguson, Alex Plotkowski, Ryan Dehoff, **Vincent C. Paquit**, "Geometry-Independent Microstructure Optimization for Electron Beam Powder Bed Fusion", Additive Manufacturing, Additive Manufacturing, Elsevier, 2020

Yousub Lee, Michael Kirka, James Ferguson, **Vincent C. Paquit**, "Correlations of cracking with scan strategy and build geometry in electron beam powder bed additive manufacturing", Additive Manufacturing, Elsevier, 2020

Sujana Chandrasekar, Jamie Coble, Sean Yoder, Peeyush Nandwana, Ryan Dehoff, **Vincent C. Paquit**, Sudarsanam S.Babu, "Investigating the effect of metal powder recycling in Electron beam Powder Bed Fusion using process log data", Additive Manufacturing, Elsevier, 2020

Sean Yoder, Peeyush Nandwana, **Vincent C. Paquit**, Michael M. Kirka, Andrew Scopel, Ryan R. Dehoff, Sudarsanam S. Babu, "Approach to Qualification using E-PBF In-situ Processes Monitoring in Ti-6Al-4V", Additive Manufacturing, Elsevier, 2019

Hicham Ghossein, Ahmed Arabi Hassen, **Vincent C. Paquit**, Lonnie J Love, Uday K Vaidya, "Innovative Method for Enhancing Carbon Fibers Dispersion in Wet-Laid Nonwovens," Materials Today Communications, Elsevier, 2018

Journal Publications (Peer-reviewed)	Sean Yoder, S Morgan, C Kinzy, E Barnes, Michael M. Kirka, **Vincent C. Paquit**, Peeyush Nandwana, Alel Plotkowski, Ryan R. Dehoff, Sudarsanam S. Babu, "Characterization of topology optimized Ti-6Al-4V components using electron beam powder bed fusion," Additive Manufacturing, Elsevier, 2018

Peeyush Nandwana, Michael M. Kirka, **Vincent C. Paquit**, Sean Yoder, Ryan R. Dehoff, "Correlations Between Powder Feedstock Quality, In Situ Porosity Detection, and Fatigue Behavior of Ti-6Al-4V Fabricated by Powder Bed Electron Beam Melting: A Step Towards Qualification," The Journal of The Minerals, Metals & Materials Society, 2018

Chad A. Steed, Ryan R. Dehoff, William H. Halsey, Sean L. Yoder, **Vincent C. Paquit**, Sarah S. Powers, "Falcon, Visual Analysis of Large, Irregularly Sampled, and Multivariate Time Series Data in Additive Manufacturing," Computers & Graphics, Elsevier, 2017

Klaus P. Ziock, Christopher B. Boehnen, Joey M. Ernst, Lorenzo Fabris, Jason P. Hayward, Thomas P. Karnowski, **Vincent C. Paquit**, Dilip R. Patlolla, David G. Trombino, "Motion Correction for Passive Radiation Imaging of Small Vessels in Ship-to-Ship Inspections," Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016

Georgia Tourassi, Sophie Voisin, **Vincent C. Paquit**, Elizabeth Krupinski, "Investigating the link between radiologists' gaze, diagnostic decision, and image content," Journal of the American Medical Informatics Association, 2013

Christopher J. Mann, Philip R. Bingham, Henry K. Lin, **Vincent C. Paquit**, Shaun S. Gleason, "Dual Modality Live Cell Imaging with Multiple-Wavelength Digital Holography and Epi-Fluorescence," 3D Research, Springer, 2011

Vincent C. Paquit, Jeffery R. Price, Kenneth W. Tobin, Fabrice Mériaudeau, "3D and Multispectral Imaging for Subcutaneous Veins Detection," Opt. Express **17**, 2009

Christopher J. Mann, Philip R. Bingham, **Vincent C. Paquit**, Kenneth W. Tobin, "Quantitative Phase Imaging by Three-Wavelength Digital Holography," Opt. Express **16**, 2008

DOE reports	Soumya Nag, Mithulan Paramanathan, Fred List III, Thomas Feldhausen, Andrzej Nycz, William Carter, Dennis Brown, Lauren Heinrich, Blane Fillingim, Luke Meyer, Brian Jordan, Jason Mayeur, Peeyush Nandwana, Yousub Lee, James Haley, **Vincent C. Paquit**, "In-Situ Monitoring Assisted Large-Scale Additive Manufacturing Of Mild Steel And 316L Alloys For Nuclear Application," ORNL/TM-2023/3090, 2023

Mark Messner, Bipul Barua, Alex Huning, Stephen Arndt, Caleb Massey, Stephen Taller, Ryan Dehoff, Michael Russell, Luke Scime, Zackary Snow, Amir Ziabari, William Halsey, Stephanie Cooper, Vladimir Orlyanchik, Michael Sprayberry, Gerry Knapp, Benjamin Stump, **Vincent C. Paquit**, Thomas Butcher, Michael McMurtrey, Tate Patterson, Subhashish Meher, Isabella van Rooyen, "ASME Code Qualification Plan for LPBF 316 SS," ANL-AMMT-009, 2023

Alex Huning, Adam Smith, Luke Scime, Michael Russell, Alyson Coates, **Vincent C. Paquit**, Ryan Dehoff, "Advancement of Certification Methods and Applications for Industrial Deployments of Components Derived from Advanced Manufacturing Technologies," ORNL/TM-2022/2654, 2022

Stephen Taller, Ty Austin, **Vincent C. Paquit**, Kurt Terrani, "Report on Properties and Microstructure of 3D Printed Inc-718," ORNL/TM-2021/2149, 2021

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DOE REPORTS

Luke Scime, Michael Sprayberry, David Collins, Alka Singh, Chase Joslin, Ryan Duncan, Joseph Simpson, Fred List III, Keith Carver, Alex Huning, James Haley, **Vincent C. Paquit**, "Report on diagnostic and predictive capabilities of the TCR digital platform," ORNL/TM-2021/2179, 2021

Alex Huning, Randall Fair, Alyson Coates, **Vincent C. Paquit**, Luke Scime, Michael Russell, Kenneth Kane, Samuel Bell, Bruce Lin, Benjamin Betzler, "Digital Platform Informed Certification of Components Derived from Advanced Manufacturing Technologies," ORNL/TM-2021/2210, 2021

Michael Russell, **Vincent C. Paquit**, Luke Scime, Alka Singh, "TCR Data Management Plan," ORNL/TM-2021/1942, 2021

Luke Scime, James Haley, William Halsey, Alka Singh, Michael Sprayberry, Amir Ziabari, **Vincent C. Paquit**, "Report on Progress of correlation of in-situ and ex-situ data and the use of artificial intelligence to predict defects, " ORNL/TM-2020/1748, 2020

Luke Scime, James Haley, William Halsey, Alka Singh, Michael Sprayberry, Amir Ziabari, **Vincent C. Paquit**, "Development of Monitoring Techniques for Binderjet Additive Manufacturing of Silicon Carbide Structures," ORNL/TM-2020/1724, 2020

Luke Scime, James Haley, **Vincent C. Paquit**, "Monitoring for additive manufacturing technologies: Report on progress, achievements and limitations of monitoring techniques," ORNL/SPR-2019/1354, 2019

CONFERENCE
PUBLICATIONS
AND
PRESENTATIONS
(Peer-reviewed)

Obaidullah Rahman, Singanallur Venkatakrishnan, Luke Scime, Paul Brackman, Curtis Frederick, Ryan Dehoff, **Vincent C. Paquit**, Amir Ziabari, "Deep Learning Based Workflow for Accelerated Industrial X-Ray Computed Tomography", IEEE International Conference on Image Processing (ICIP), 2023

Amir Ziabari, Singanallur Venkatakrishnan, Abhishek Dubey, Alex Lisovich, Paul Brackman, Curtis Frederick, Pradeep Bhattad, Philip Bingham, Alex Plotkowski, Ryan Dehoff, **Vincent C. Paquit**, "Simurgh: A Framework for Cad-Driven Deep Learning Based X-Ray CT Reconstruction", IEEE International Conference on Image Processing (ICIP), 2022

Amir Ziabari, Singanallur Venkatakrishnan, Alex Lisovich, Paul Brackman, Pradeep Bhattad, Ryan Dehoff, Alex Plotkowski, **Vincent C. Paquit**, "High Throughput Deep Learning-Based X-ray CT Characterization for Process Optimization in Metal Additive Manufacturing", American Society of Precision Engineering, 2022

Amir Ziabari, Singanallur Venkatakrishnan , Michael Kirka, Paul Brackman, Ryan Dehoff, Philip Bingham, **Vincent C. Paquit**, "Beam Hardening Artifact Reduction In X-Ray CT Reconstruction of 3D Printed Metal Parts Leveraging Deep Learning and CAD models", ASME International Mechanical Engineering Congress and Exposition, 2020

Amir Ziabari, Singanallur Venkatakrishnan , Michael Kirka, Paul Brackman, Ryan Dehoff, Philip Bingham, **Vincent C. Paquit**, "Beam Hardening Artifact Reduction In X-Ray CT Reconstruction of 3D Printed Metal Parts Leveraging Deep Learning and CAD models", Proceedings of the ASME 2020 International Mechanical Engineering Congress and Exposition. Volume 2B: Advanced Manufacturing, 2020

Amir Ziabar, Michael Kirka, **Vincent C. Paquit**, Philip Bingham, Singanallur Venkatakrishnan, "X-Ray CT Reconstruction of Additively Manufactured Parts using 2.5D Deep Learning MBIR, " Microscopy and Microanalysis 2019

Vincent C. Paquit

Sarah S. Powers, Ryan R. Dehoff, **Vincent C. Paquit**, Chad A. Steed, Derek E. Kistler, "Application of Data Analytics to Additive Manufacturing," 11th Workshop on Data Mining and Decision Analytics (DM-DA 2016), 2016

William H. Halsey, Chad A. Steed, Ryan R. Dehoff, **Vincent C. Paquit**, Sean L. Yoder, "Segmented Time Series Visualization Tool for Additive Manufacturing,' ' IEEE Symposium on Large Data Analysis and Visualization, 2016

Chad A. Steed, Ryan R. Dehoff, William H. Halsey, Sean L. Yoder, **Vincent C. Paquit**, Sarah S. Powers,"Advancing Additive Manufacturing Through Visual Data Science," IEEE Visualization in Data Science, 2016

Dilip R. Patlolla, Harini Sridharan, **Vincent C. Paquit**, Jeanette E. Weaver, Mark A. Tuttle, Anil M. Cheriyadat, "Mapping and Characterizing Global-Scale Human Settlements Using HPC," Super Computing conference (SC'13), 2013

Vincent C. Paquit, Thomas P. Karnowski, Deniz Aykac, Yakin Li, Kenneth W. Tobin Jr., Edward Chaum, "Detecting flash artifacts in fundus imagery," IEEE Engineering in Medicine and Biology Society Conference (EMBC), 2012

Klaus P. Ziock, Christopher B. Boehnen, Joey M. Ernst, Lorenzo Fabris, Jason P. Hayward, **Vincent C. Paquit**, Dilip R. Patlolla, "Motion Correction for Passive Radiation Imaging of Small Vessels in Ship-to-Ship Inspections, IEEE Nuclear Science Symposium, 2012

Vincent C. Paquit, Mark W. Wendel, David K. Felde, "Quantitative measurement by artificial vision of small bubbles in flowing mercury," SPIE Electronic Imaging - Image Processing: Machine Vision Applications IV, 2011
Christopher Boehnen, **Vincent C. Paquit**, Klaus Ziock, Tyler Guzzardo, Michael Whitaker, Ana Raffo-Caiado, "Field trial of a highly portable coded aperture gamma ray and 3D imaging system," Future of Instrumentation International Workshop (FIIW), 2011

Vincent C. Paquit, Shaun S. Gleason, Udaya C. Kalluri, "Monitoring plant growth using high resolution micro-CT images," SPIE Electronic Imaging - Image Processing: Machine Vision Applications IV, 2011

Shaun S. Gleason, **Vincent C. Paquit**, Hassina Z. Bilheux, Keely Willis, Alyssa Deleon, Whitney McNutt, Udaya C. Kalluri, "X-ray and Neutron Imaging for Plant Systems Biology Investigations," Future of Instrumentation International Workshop (FIIW), 2010.

Mark Wendel, Ashraf Abdou, **Vincent C. Paquit**, David Felde, Bernard Riemer, "Creating Small Gas Bubbles in Flowing Mercury Using Turbulence at an Orifice," ASME 3rd Joint US-European Fluids Engineering Summer Meeting. 2010.

Derek Rose, Itamar Arel, Thomas Karnowski, **Vincent C. Paquit**, "Applying Deep-Layered Clustering to Mammography Image Analytics," Biomedical Sciences and Engineering Conference (BSEC), 2010

Fabrice Mériaudeau, **Vincent C. Paquit**, Nicolas Walter, Jeffery R. Price, Kenneth W. Tobin , "3D and Multispectral Imaging for Subcutaneous Veins Detection," Proceedings of the IEEE International Conference on Image Processing (ICIP'09), 2009

Vincent C. Paquit, Fabrice Mériaudeau, Jeffery R. Price, Kenneth W. Tobin, "Multispectral Imaging For Subcutaneous Structures Classification And Analysis," International Topical Meeting on Optical Sensing and Artificial Vision (OSAV'08), 2008.

CONFERENCE PUBLICATIONS AND PRESENTATIONS *(Peer-reviewed)*

Vincent C. Paquit, Jeffery R. Price, Fabrice Mériaudeau, Kenneth W. Tobin, "Improving Light Propagation Monte Carlo Simulations with Accurate 3D Modeling of Skin Ttissue," Proceedings of the IEEE International Conference on Image Processing (ICIP'08), 2008.

Vincent C. Paquit, Jeffery R. Price, Fabrice Mériaudeau, Kenneth W. Tobin, "Simulation of Skin Reflectance Images Using 3D Tissue Modeling and Multispectral Monte Carlo Light Propagation," IEEE Engineering in Medicine and Biology Society Conference, (EMBC'08), 2008.

Vincent C. Paquit, Jeffery R. Price, Fabrice Mériaudeau, Kenneth W. Tobin, "3D Multispectral Light Propagation Model For Subcutaneous Veins Imaging," SPIE Medical Imaging 2008: Physics of Medical Imaging, 2008.

Jeffery R. Price, Timothy Gee, **Vincent C. Paquit**, Kenneth W. Tobin, "On the Efficacy of Correcting for Refractive Effects in Iris Recognition," IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2007), 2007

Vincent C. Paquit, Jeffery R. Price, Fabrice Mériaudeau, Kenneth W. Tobin, Thomas Ferrell, "Combining near-infrared illuminants to optimize venous imaging," SPIE Medical Imaging 2007: Visualization, Image-Guided Procedures, and Display, 2007

Vincent C. Paquit, Jeffery R. Price, Ralph Seulin, Fabrice Mériaudeau, Rubye H. Farahi, Kenneth W. Tobin, Thomas Ferrell, "Near-infrared imaging and structured light ranging for automatic catheter insertion (Cum Laude Poster Award)," SPIE Medical Imaging, 2006

CONFERENCE PUBLICATIONS AND PRESENTATIONS

Luke Scime, Alka Singh, Daniel Robertson, Brandon Mathis, William Halsey, James Haley, Samuel Leach, Kyle Saleeby, Amir Ziabari, Michael Sprayberry, Derek Rose, Ryan Dehoff, **Vincent C. Paquit**, "A Comprehensive Digital Platform for Additive Manufacturing," ASTM International Conference on Additive Manufacturing, 2020 (invited talk)

Thomas Feldhausen, Thomas Kurfess, Michael Kirka, **Vincent C. Paquit**, "Fabrication and Repair of Industrial Gas Turbine Engine Components using Hybrid (Additive/Subtractive) Manufacturing Processes," ASME Advanced Manufacturing and Repair for Gas Turbines, 2020 (invited talk)

Amir Ziabari, Singanallur Venkatakrishnan, Ryan Dehoff, Philip Bingham, Michael Kirka, **Vincent C. Paquit**, "AI-based X-Ray CT Reconstruction for Metal Additive Manufacturing," SIAM SEAS Annual Meeting, 2019 (invited talk)

Luke Scime, Derek Siddel, **Vincent C. Paquit**, "A Machine-Agnostic Approach to Layer-Wise Process Monitoring and Control of Powder Bed Additive Manufacturing Technologies," TMS Annual Meeting and Exhibition, 2020

Peeyush Nandwana, **Vincent C. Paquit**, Michael Kirka, Ercan Cakmak, Sudarsanam Babu, Ryan Dehoff, "Sources of Scatter in the Fatigue Behavior of Ti-6Al-4V Fabricated via Electron Beam Melting," TMS Annual Meeting and Exhibition, 2019

Peeyush Nandwana, Derek Siddel, Christopher Shafer, Amy Elliott, Luke Scime, **Vincent C. Paquit**, "Densification of H13 Tool Steel Components Fabricated via Binder Jet Additive Manufacturing for Tooling Applications," TMS Annual Meeting and Exhibition, 2019

Luke Scime, Derek Siddel, **Vincent C. Paquit**, "Layer-Wise Anomaly Detection and Process Control using a Machine-Agnostic Algorithm for Semantic Segmentation of Powder Bed Images in Additive Manufacturing Processes, " Solid Freeform Fabrication Symposium, 2019

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Ryan Dehoff, Peeyush Nandwana, Sean Yoder, Chasen Ranger, Ross Cunningham, Anthony Rollett, Sudarsanam Babu, Michael Kirka, **Vincent C. Paquit**, Peter Zeglen, Derek Rose, "Processing Modalities of Ti-6Al-4V Fabricated via Additive Manufacturing," TMS Annual Meeting and Exhibition, 2018 (invited talk)

Alex Plotkowski, Ryan R. Dehoff, **Vincent C. Paquit**, Peeyush Nandwana, Michael Kirka,Yousub Lee, Chris Arthur,"In situ detection of porosity and its correlation with fatigue behavior of additive manufactured Ti-6Al-4V," ASPE and euspen Summer Topical Meeting, 2018

Alex Plotkowski, Michael Kirka, **Vincent C. Paquit**, Sean Yoder, Ryan Dehoff, Sudarsanam Babu, "Integrated Materials Theory, Modeling, and Data Analytics for Metal Additive Manufacturing," TMS Annual Meeting and Exhibition, 2018 (invited talk)

Peeyush Nandwana, Michael Kirka, Sean Yoder, **Vincent C. Paquit**, Ercan Cakmak, Ryan R. Dehoff, "Integrated Materials Theory, Modeling and Data Analytics for Metal Additive Manufacturing," TMS Annual Meeting and Exhibition, 2018

Ryan Dehoff, **Vincent C. Paquit**, Michael Kirka, Peeyush Nandwana, Ralph Dinwiddie, Alex Plotkowski, James Ferguson II, Jacob Raplee, William Halsey, Sean Yoder, Sudarsanam Babu, "Utilization of In-Situ Process Monitoring, Process Modeling and Data Analytics for Materials Development", EBAM, 2018 (invited talk)

Peeyush Nandwana, Michael Kirka, **Vincent C. Paquit**, Sean Yoder, Ercan Cakmak, Ryan R. Dehoff, "Fatigue Behavior and Defect Correlation in Material Fabricated in the Electron Beam Melting Process, " ASTM Symposium on Fatigue and Fracture of Additive Manufactured Materials and Components, 2017

Ryan Dehoff, Suresh Babu, Michael Kirka, **Vincent C. Paquit**, Narendran Raghavan, Ralph Dinwiddie, Kinga Unocic, Peeyush Nandwana, Chad Steed, William Halsey, Sean Yoder, "Understanding Structure property relationships in Electron Beam Melting through Data Analytics and Visualization," TMS Annual Meeting and Exhibition, 2017

Sarah Powers, Ryan R. Dehoff, **Vincent C. Paquit**, Chad Steed, Derek Kistler, "Overcoming additive manufacturing challenges using data analytics," Grace Hopper Celebration of Women in Computing, 2017

Sean Yoder, Michael Kirka, Ryan Dehoff, Sudarsanam Babu, **Vincent C. Paquit**, Alex Plotkowski, Peeyush Nandwana, "Topology Optimization for Additive Manufacturing for Ti64 in EBM,F" abtech Expo, 2017

Michael Kirka, Ryan Dehoff, Jake Raplee, Alex Plotkowski, **Vincent C. Paquit**, Sean Yoder, Peeyush Nandwana, "Status of In-situ Process Monitoring in the Electron Beam Melting Process," MS&T, 2017

Michael Kirka, Peeyush Nandwana, **Vincent C. Paquit**, Sean Yoder, Ercan Cakmak, Ryan Dehoff, "Fatigue Behavior and Defect Correlation in Material Fabricated in the Electron Beam Melting Process," Symposium on Fatigue and Fracture of Additive Manufactured Materials and Components, 2017

Ryan Dehoff, Michael Kirka, Jake Raplee, Alex Plotkowski, **Vincent C. Paquit**, Sean Yoder, Peeyush Nandwan, "Status of In-situ Process Monitoring in the Electron Beam Melting Process," MS&T 2017

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CONFERENCE PUBLICATIONS AND PRESENTATIONS

William Halsey, Chad Steed, Ryan Dehoff, **Vincent C. Paquit**, Sean Yoder, "Segmented Time Series Visualization Tool for Additive Manufacturing," Visualization in Data Science, 2016

Chad Steed, Ryan Dehoff, William Halsey, Sean Yoder, **Vincent C. Paquit**, Sarah Powers, "Advancing Additive Manufacturing Through Visual Data Science," Visualization in Data Science, 2016

Vincent C. Paquit, Ryan Dehoff, Michael Kirka, "Quality Control by Artificial Vision of Additively Manufactured Objects in the Arcam Q10 Electron Beam Melting Process," ASPE Dimensional Accuracy and Surface Finish in Additive Manufacturing, 2016

Michael Kirka, Ryan Dehoff, **Vincent C. Paquit**, Ralph Dinwiddie, Alfred Okello, Yousub Lee, Narendran Raghavan, Sudarsanam Suresh Babu, "Holistic View of Electron Beam Melting for Ni-base Superalloys: Feedstock Material to Material Performance," Solid Freeform Fabrication Conference, 2016

Michael Kirka, Ryan Dehoff, **Vincent C. Paquit**, Michael Goin, Michael Pearce, Sudarsanam Babu, Curtis Frederick, "Rationalization of Advanced Site-specific Microstructure Control within Additive Manufactured Components," TMS Annual Meeting and Exhibition, 2016

Ryan Dehoff, Michael Kirka, Edwin Schwalbach, Michael Groeber, Michael Goin, Michael Pearce, **Vincent C. Paquit**, "Automated in-situ defect detection and geometry validation on the Q10 system," TMS Annual Meeting and Exhibition, 2016

Harini Sridharan, Anil Cheriyadat, Dilip Patlolla, **Vincent C. Paquit**, Jiangye Yuan, "High Performance Computing for Large Scale Settlement Mapping and Characterization using High Resolution Imagery," Association of American Geographers Annual Meeting, 2015

Ryan R. Dehoff, Frank Medina, Benjamin George, **Vincent C. Paquit**, "Real Time Defect Detection on New Generation Electron Beam Manufacturing System," Materials Science & Technology, 2014

Ralph B. Dinwiddie, Benjamin George, **Vincent C. Paquit**, Ryan R. Dehoff, Frederick A. List III, Larry E. Lowe, "Infrared Imaging of the E-Beam Melting 3D-Printing Process," SPIE Defense + Security Symposium, 2014

Dilip R. Patlolla, Harini Sridharan, Anil M. Cheriyadat, **Vincent C. Paquit**, "A Scalable Computational Framework for Large-Scale Critical Infrastructure Mapping Using Satellite Imagery," to appear Association of American Geographers, 2014

Harini Sridharan, Anil M. Cheriyadat, Dilip R. Patlolla, Jiangye Yuan, Jeanette E. Weaver, **Vincent C. Paquit**, Eddie A Bright, "MSMTool - A scalable remote sensing solution for locating population," to appear Association of American Geographers, 2014

Stu Ostro, Dan Huber, Joe H. Casola, Dale Kaiser, Thomas P. Karnowski, **Vincent C. Paquit**, Shih-Chieh Kao, Jennifer Francis, Jay Gulledge, "Characterizing Anomalous Mid-tropospheric Ridges and Their Trends," 26th Conference on Climate Variability and Change, 2014

Vincent C. Paquit

Dale Kaiser, Shih-Chieh Kao, Thomas P. Karnowski, **Vincent C. Paquit**, "Exploring 500 hPa Variations over 19792012: An Overview of Initial ORNL Efforts," ORNL Monster Ridges Workshop, 2013

Harini Sridharan, Anil M. Cheriyadat, Dilip R. Patlolla, **Vincent C. Paquit**, "A Computational Framework for Satellite Image Driven Mapping and Monitoring of Critical Infrastructure," ORNL Eugene P. Wigner Distinguished Lecture Series on Science, 2013

Michael Kirka, Ryan Dehoff, **Vincent C. Paquit**, Michael Goin, Michael Pearce, Sudarsanam Suresh Babu, Curtis Frederick, "Rationalization of Advanced Site-specific Microstructure Control within Additive Manufactured Components," TMS Annual Meeting & Exhibition, 2016

Ryan Dehoff, **Vincent C. Paquit**, Michael Kirka, Edwin Schwalbach, Michael Groeber, Michael Goin, Michael Pearce, "Automated in-situ defect detection and geometry validation on the Q10 system," TMS Annual Meeting & Exhibition, 2016

Udaya Kalluri, Hassina Bilheux, Shaun Gleason, **Vincent C. Paquit**, Timothy McKnight, Justin Baba, Bob Standaert, Saed Mirzadeh, Sandra Davern, "X-ray-, Neutron-and Radio-imaging for Plant Systems Biology," Plant and Animal Genome XXI, 2013

Vincent C. Paquit, Jeffery R. Price, Fabrice Mriaudeau, Kenneth W. Tobin Jr, "Quantitative imaging of subcutaneous veins with multispectral illumination and 3D modeling," Biomedical Science and Engineering Center (BSEC) conference, 2013
Dustin Osborne, Deniz Aykac, Shaun S. Gleason, Ryan A. Kerekes, John S. Wall, Jens Gregor, **Vincent C. Paquit**, "Whole Body Murine Organ Segmentation Using microCT and Advanced 3D Level Set Algorithms, World Molecular Imaging Congress, 2012

Vincent C Paquit, Philip Bingham, Shaun S. Gleason, Ana Claudia Raffo-Caiado, Anil M. Cheriyadat, Ranga Raju Vatsavai, "Geospatial Imaging Toolbox for International Safeguards Applications," Meeting Institute of Nuclear Materials Management (INMM), 2012

Georgia D. Tourassi, **Vincent C Paquit**, "Towards Human-Centered Decision Support in Mammography," Meeting Biomedical Engineering Society (BMES), 2012 *(invited talk)*

Georgia D. Tourassi, **Vincent C Paquit**, E Krupinski, "Machine Learning Analysis of Radiologists Eye-Gaze Data, Decisions, and Local Image Texture to Reduce Diagositic Errors in Screening Mammography," 2012

Vincent C Paquit, "Non-Invasive Optical Imaging of Cutaneous and Sub-Cutaneous Structures", invited Biomedical Science and Engineering Center (BSEC) seminar, 2012

Carlos Rojas, **Vincent C Paquit**, Oscar H. Grandas, Robert Patton, Barbara G. Beckerman, "Text and Image Analysis for Endovascular Abdominal Aortic Aneurysms Repair Data, Biomedical Science and Engineering Center (BSEC) conference, 2011

Vincent C Paquit, Oscar H. Grandas, Shaun S. Gleason, Barbara G. Beckerman, "Postoperative monitoring of abdominal aortic aneurism using quantitative imaging, Biomedical Science and Engineering Center (BSEC) conference, 2011

Vincent C. Paquit, Jeffery R. Price, Fabrice Mriaudeau, Kenneth W. Tobin Jr, "Quantitative imaging of subcutaneous veins with multispectral illumination and 3D modeling," Biomedical Science and Engineering Center (BSEC) conference, 2011

Vincent C. Paquit

Barbara Beckerman, Chris Symons, Ryan Kerekes, **Vincent C. Paquit**, Robert Patton, Shaun Gleason,"A Multi-Modal, Semi-Supervised Learning System for Building Better Decision Support Systems for the Analysis of Mammograms," Annual Meeting of the Radiological Society of North America (RSNA), 2009

Chris Symons, Ryan Kerekes, **Vincent C. Paquit**, Robert Patton, Shaun Gleason, Barbara Beckerman, "A multimodal, semi-supervised learning system for building better decision support systems for the analysis of mammograms," Annual Meeting of the Radiological Society of North America (RSNA), 2009.

Thomas L Ferrell, Franois G Pin, Lonnie J Love, John F Jansen, Kenneth W Tobin, Rubye Farahi, Jeffery R Price, **Vincent C. Paquit**, David Hedden, Fabrice Mériaudeau, Ralph Seulin, "Intelli-cath: Toward automated needle-insertion systems and intelligent catheters," Annual Medicine Meets Virtual Reality (MMVR) Conference, 2006.

Amir Ziabari, Philip Bingham, Ryan Dehoff, Michael Kirka, Singanallur Venkatakrishnan, **Vincent C. Paquit**, "Procedure to remove beam hardening from X-Ray CT Reconstruction leveraging a priori known model for the object of interest", UT-Battelle, LLC, Invention Disclosure No. 202004647, March 12, 2020

Udaya Kalluri, Lonnie Love, Andrzej Nycz, Xiaohan Yang, Harold Waters, Samuel Leach, **Vincent C. Paquit**, "A method for automated high throughput plant transformation", UT-Battelle, LLC, Invention Disclosure No. 202004627, April 7, 2020

James Haley, Samuel Leach, Ryan Dehoff, **Vincent C. Paquit**, "Multi measurement multi view, 360 degree, 3D, thermal, DIC, surface roughness - in situ monitoring technique for directed energy deposition systems", UT-Battelle, LLC, Invention Disclosure No. 202004583, December 5, 2019

Chad A. Steed, Thomas E. Potok, Robert M Patton, Ryan R. Dehoff, **Vincent C. Paquit**, "A Visual Analytics Framework for Exploratory Data Analysis of Time-based, Multivariate Log Data," UT-Battelle, LLC, Invention Disclosure No. 201603628, January 29, 2016

Roger A. Kisner, Timothy J. McIntyre, **Vincent C. Paquit**, "Internal tube inspection system," UT-Battelle, LLC, Invention Disclosure No. 3179.0, 2013

Kenneth W. Tobin, Jeffery R. Price, **Vincent C. Paquit**, "Improved Device for Assisted Venipuncture," UT-Battelle, LLC, Invention Disclosure No. 1300002067, March 31, 2008

Thomas Ferrell, David Hedden, Rubye H. Farahi, **Vincent C. Paquit**, Fabrice Mériaudeau, "Self-contained Compact Venous Imager for Catheter Insertion," University of Tennessee - Knoxville, USA, 22 December 2005

Amir Ziabari, Philip Bingham, Ryan Dehoff, Singanallur Venkatakrishnan, **Vincent C. Paquit**, "Simurgh", UT-Battelle, LLC, Commercial Copyright Submission No. 90000193, 2022

Number of licence(s) awarded: 1

Luke Scime, James Ferguson, Desarae Goldsby, William Halsey, Chase Joslin, Dylan Richardson, Derek Rose, Derek Siddel, **Vincent C. Paquit**, "Peregrine", UT-Battelle, LLC, Commercial Copyright Submission No. 81915407, July 5, 2019

Number of licence(s) awarded: 37

Vincent C. Paquit

PUBLISHED
DATASETS

Luke Scime, Chase Joslin, David Collins, William Halsey, Ryan Duncan, **Vincent C. Paquit**, "A Co-Registered In-Situ and Ex-Situ Tensile Properties Dataset from a Laser Powder Bed Fusion Additive Manufacturing Process (Peregrine v2023-11)," United States: N. p., 2023. Web. doi:10.13139/ORNLNCCS/2001425

Luke Scime, Chase Joslin, Ryan Duncan, Frank Brinkley, Christopher Ledford, Derek Siddel, **Vincent C. Paquit**, "Layer-wise Imaging Dataset from Powder Bed Additive Manufacturing Processes for Machine Learning Applications (Peregrine v2022-10.1)," United States: N. p., 2023. Web. doi:10.13139/ORNLNCCS/1923043

Luke Scime, Chase Joslin, Ryan Duncan, Frank Brinkley, Christopher Ledford, Derek Siddel, **Vincent C. Paquit**, "Layer-wise Imaging Dataset from Powder Bed Additive Manufacturing Processes for Machine Learning Applications (Peregrine v2022-10)" United States: N. p., 2023. Web. doi:10.13139/ORNLNCCS/1896716

Luke Scime, **Vincent C. Paquit**, Chase Joslin, Dylan Richardson, Desarae Goldsby, Larry Lowe, "Layer-wise imaging dataset from powder bed additive manufacturing processes for machine learning applications (peregrine v2021-03)", United States: N. p., 2021. Web. doi:10.13139/ORNLNCCS/1779073

RESEARCH
SUPPORT

Data analytics for additive manufacturing: I lead the Digital Factory project at the Manufacturing Demonstration Facility (MDF) and the Carbon Fiber Technology Facility (CFTF). This effort is mainly funded by DOE's Advanced Materials and Manufacturing Technologies Office (AMMTO) with additional funding from collaboration with industry and other government agencies. The project aims at developing data driven methodologies supporting the certification and qualification of additively manufactured components for critical applications.

Role: PI and co-PI - Cumulative budget FY16 to FY20: ~$14M
Role: PI - Budget FY21 to FY23: ~$11M

Advanced Materials and Manufacturing Technologies (AMMT): I am the thrust lead for the digital manufacturing activities for ORNL and I oversee the technical work packages at four other national laboratories, ANL, INL, LANL, and PNNL. Our objective is to develop data driven techniques for the certification and qualification of additively manufactured components for nuclear applications. This program is building on previous activities part of the Transformational Challenge Reactor (TCR) program, for which I was the thrust lead for data science, and metal manufacturing and testing.

Role: PI - TCR Cumulative budget FY19 to FY21: ~$9.2M
Role: PI - AMMT Cumulative budget FY22 to FY23: ~$4.2M + $3M over 3 years

DoD project 1 - Certification of critical parts produced by advanced manufacturing systems: no detail can be provided due to the sensitive nature of this multiyear project.

Role: co-PI - Cumulative budget FY21 to FY23: ~$4.0M

DoD project 2 - Certification of critical parts produced by advanced manufacturing systems: no detail can be provided due to the sensitive nature of this multiyear project.

Role: co-PI - Cumulative budget FY23: ~$1.0M

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RESEARCH SUPPORT	**DoD project 3 - Certification of critical parts produced by advanced manufacturing systems**: no detail can be provided due to the sensitive nature of this multiyear project.

<div align="right">Role: co-PI - Cumulative budget FY21 to FY23: ˜$1.2M</div>

Vincent C. Paquit et al., "Multimodal Imaging of Belowground Plant Root Distribution and Dynamics," Oak Ridge National Laboratory - LDRD Seed Money, 2016

<div align="right">Role: PI - Award: $190K</div>

Vincent C. Paquit et al., "Systems for steganalysis," Oak Ridge National Laboratory - LDRD Seed Money, 2015   *Role: PI - Award: $190K*

Jeffery R. Price, **Vincent C. Paquit**, "Quantitative imaging of subcutaneous veins with multispectral Illumination and 3D modeling," Oak Ridge National Laboratory - LDRD Seed Money, 2008   *Role: Co-PI - Award: $175K*

HONORS AND AWARDS

ORNL Awards Night, Technology Transfer Award for "the licensing of Peregrine, a software tool for in-situ defect detection in powder bed additive manufacturing systems", UT-Battelle Science & Technology Award, 2022

"Licensing Artificial Intelligence software for real-time monitoring of additive manufacturing," Excellence in Technology Transfer Award, Federal Laboratory Consortium for Technology Transfer, 2022

ORNL Awards Night, Team Award for Research Accomplishment for "significant research accomplishment in the fabrication, characterization, certification, and deployment of nickel-based superalloy turbine blades for a land-based turbine engine fabricated via additive manufacturing. The blades were assembled by Solar Turbines into a disk and survived a spin pit test at 112% of their design limit with better balance than conventionally manufactured disks", UT-Battelle Science & Technology Award, 2020

Elected Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) in May 2015

ORNL CSED - Technical Accomplishment award: for the development of novel image processing algorithms on GPU platform part of the "Accelerated Settlement Detection using High Performance Computing Methods" (2015)

Author of paper (Paquit et al 2006) selected as "Best Poster" of session and "Cum Laude" poster for Visualization, Image-Guided Procedures, and Display session at the SPIE Symposium on Medical Imaging, February 2006.

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MENTORED STUDENTS

I am actively mentoring graduate students since 2015

PhD students

- Rebecca Brink **2019 to present**
  Research topic: leverage artificial intelligence and computer vision techniques for quantitative analysis of material characterization datasets and explore correlations with manufacturing processes and conditions
  School: University of Tennessee Knoxville - Bredesen Center

- Rui Li **2018 to present**
  Research topic: real time 3D detection of geometrical defects in parts printed with large scale polymer printing technologies
  School: University of Tennessee Knoxville - I&SE Department

- William Halsey **2017 to present**
  Research topic: Printing strategy optimization on electron beam melting 3D printers for micro-structure orientation control
  School: University of Tennessee Knoxville - Bredesen Center

- Kyle Saleeby **February 2021**
  Research topic: Multi-agent open architectures for process monitoring and part certification
  School: Georgia Tech - Precision Machining Research Consortium

- Sujana Chandrasekar **March 2021**
  Research topic: Development of data science tools for part qualification in Additive Manufacturing
  School: University of Tennessee Knoxville - Bredesen Center

Master's students

- Sean Yoder **December 2018**
  Title:Approach to Qualification for Electron Beam Powder Bed Fusion in Ti-6Al-4V
  School: University of Tennessee Knoxville - Mechanical Engineering Department

- Christopher Griffin **May 2017**
  Title:Viability of Additive Manufacturing for Production and Tooling Applications: a Development of the Business Case
  School: University of Tennessee Knoxville - Mechanical Engineering Department

- James Ferguson **August 2016**
  Title:Additive Manufacturing Defect Detection using Neural Networks
  School: University of Tennessee Knoxville - EE&CS Department

Vincent C. Paquit

PROFESSIONAL
ACTIVITIES

Journal - guest editor:
- Hindawi Publishing Corporation: International Journal of Biomedical Imaging

Conference - executive committee member:
- Smart Manufacturing Experience (2018, 2020)

Conference - steering committee member:
- Quality Control by Artificial Vision (QCAV) conference (2019, 2021, 2023)

Conference - committee member:
- IS&T Electronic Imaging conference: Image Processing - Machine Vision Applications (2012 - present)
- Quality Control by Artificial Vision (QCAV) conference (2015 - present)
- ORNL Biomedical Science and Engineering Center (BSEC) conference (2013, 2014)

Act as reviewer for the following journals
- Elsevier, Additive Manufacturing
- SPIE publishing, Journal of Biomedical Optics
- SPIE publishing, Journal of Electronic Imaging
- Optical Society of America: Optics Letters
- Optical Society of America: Optics Express
- Optical Society of America: Applied Optics
- Optical Society of America: JOSA A
- Institute of Physics: Physica Scripta
- Springer, 3D Research Journal
- Springer, Precision Agriculture

Acted as reviewer for the following conferences
- IEEE, Engineering in Medicine and Biology Society Conference
- IEEE, Biomedical Science and Engineering Center conference
- IEEE, Future of Instrumentation International Workshop
- SPIE, Electronic Imaging conference: Image Processing - Machine Vision Applications
- Quality Control by Artificial Vision (QCAV) conference
- ORNL, DOE Publication Tracking System