Tsai Lu Liu

Dean and Professor College of Architecture, Arts, and Design Virginia Tech

Education

Master of Industrial Design	Auburn University
Master of Business Administration	Robinson College of Business, Georgia State University
B.S. in Industrial Design	National Cheng Kung University, Taiwan

Professional Experience

Dean and Professor	College of Architecture, Arts, and Design Virginia Polytechnic Institute and State University (Virginia Tech)	2023 - present
Head and Professor	Department of Graphic Design and Industrial Design, NC State University	2012 - 2023
Faculty, PhD in Design Program	College of Design, NC State University	2012 - 2023
Faculty, Doctor of Design Program	College of Design, NC State University	2018 - 2023
Adjunct Professor	School of Law, Campbell University	2018 – 2023
Adjunct Professor	SKEMA Business School, US Campus	2022 – 2023
Interim Associate Dean for Research & Academic Affairs	College of Architecture, Design and Construction, Auburn University	2011 - 2012
Associate Professor of Industrial Design	School of Industrial and Graphic Design and Honors College, Auburn University	2009 - 2012
Assistant Professor of Industrial Design	School of Industrial and Graphic Design, Auburn University	2004 - 2009
President	Emman Technologies, Inc., Taiwan	2002 - 2004
Adjunct Faculty	Shu Te University, Taiwan	2003 - 2004
President	Paragon Micro International, Inc., Taiwan	2000 - 2002
Executive Director, Product Development & Marketing	Micro Sova Ltd., Taiwan	1998 - 2000
Vice President, Marketing & Product Management	Cybertel, Inc., Taiwan	1997 - 1998
Manager, Design & Marketing	TCV Industries, Ltd., Taiwan	1995 – 1998
Industrial Designer	Design Principles, Inc., Huntsville, Alabama	1992 – 1995
Designer	Kaowu Architecture & Construction Co., Taiwan	1987 - 1988

Honors

Featured Speaker	Campbell University Law School Innovation Institute Launch Seminar "The Value of Design Thinking in Law Education"	2021
Keynote Speaker	The 3 rd International Academic Week of Design Think Tank & Graduate Education "Design Thinking for the Society" Yanshan University, China	2020
NC State University Representative	ACC Academic Leaders Network	2019
Keynote Speaker	International Conference on Technology and Design "Design Thinking Beyond Design Schools" Zhejiang University and the Singapore University of Technology and Design	2019
Keynote Speaker	The International Forum on Innovation and Emerging Industries Development (IEID) "The Next Chapter of Digital Creativity and Innovation" Chinese Academy of Engineering and Shanghai Municipal Government	2016
Keynote Speaker	The 8 th International Conference on Planning and Design "The Future of Design Practice and Design Education" National Cheng Kung University/Ministry of Science and Technology Taiwan	2015
Keynote Presentation	Include 2009: International Conference on Inclusive Design "Vivisi: a system of musical illumination" Royal College of Art, London, United Kingdom	2009

Awards

Winner, GDUSA Health + Care Design Award	Graphic Design USA	2021
Outstanding Extension Service Award	NC State University	2013
Innovator Award	Southern Growth Policies Board, North Carolina	2010
Outstanding Faculty Award	Auburn University Student Government Association	2007
Outstanding Teaching Award	College of Architecture, Design, and Construction Auburn University	2006
Outstanding Teaching Award	College of Architecture, Design, and Construction Auburn University	2005

Presentations to International Conferences

2021 International Design Conference (IDSA IDC)	"A Tale of Design, Behavioral Science and Vaccine Reluctance"	2021
Industrial Designers Society of America 2017 International Conference	"You Think You Know Ethnography? Ask an Anthropologist!"	2017
Industrial Designers Society of America 2011 International Conference	"If It's Good for Users and Business, Is It Good for Designers?"	2011
Industrial Designers Society of America 2010 International Conference	"The Engine behind Innovation: DIY Solutions and Portable Generators"	2010
Industrial Designers Society of America 2008 International Conference	"Compete only when Competitive: Industrial Design Strategies of the Micro Economies such as Taiwan, Hong Kong, and Singapore"	2008

Invited Presentations/Lectures/Workshops

Panelist NC State University Wilson College of Textiles Graduate Student Research Open House	"Enhancing Quality of Life for All: Innovation, Sustainability and Adaptability"	4/7/2023
Invited Lecture Duke University Law School	"Design Thinking and Law Education"	2/1/2023
Invited Lecture Boston College	"Innovation through Human Centered Design"	11/17/2022
Invited Lecture Kenan–Flagler Business School University of North Carolina at Chapel Hill	"Empathetic Design"	10/04/2022
Invited Presentation NYC X Design Festival	"Universal Design in Public Transportation"	11/17/2021
Invited Lecture Kenan–Flagler Business School University of North Carolina at Chapel Hill	"Design Thinking and Design Process"	9/28/2021
Invited Presentation Department of Engineering Education Virginia Tech	"Design Thinking in Engineering Education"	4/8/2021
Invited Lecture to a joint session of College of Textiles, NC State University and Department of Art and Design, NC Central University	"Universal Design in Textile Design"	4/7/2021
Invited Lecture Kenan–Flagler Business School University of North Carolina at Chapel Hill	"Design Thinking, Iteration and Prototyping"	9/17/2020

Invited Presentation Lecture Series North Carolina Bar Association	"Design Thinking in the Legal Profession"	3/21/2020
Invited Lecture Lynch School of Education and Human Development Boston College, Boston, MA	"Design Thinking and Making, Prototyping and Putting Design into Action"	3/17/2020
Invited Lecture College of Natural Resources NC State University	"Design Thinking and Making"	3/2/2020
Invited Lecture Kenan–Flagler Business School University of North Carolina at Chapel Hill	"Design Thinking and Making in Business Organizations"	10/8/2019
Invited Lecture Poole College of Management NC State University	"Design Thinking and Making for Business Students"	7/30/2019
Invited Lecture D-Will Lecture Series, China Academy of Art	"Design for Social Good The Next Frontier of Design Professions"	7/15/2019
Invited Workshop Pratt School of Engineering Duke University	"Physical Disability & Universal Design"	2/27/2019
Invited Lecture Kenan–Flagler Business School University of North Carolina at Chapel Hill	"Design and Innovative Thinking for Future Business Leaders"	10/30/2018
2018 Entrepreneurship Workshop Series Organized by the Innovation and Entrepreneurship Center, National Cheng Kung University Sponsored by the Ministry of Education, Taiwan	"Social Entrepreneurship, Not for Profit, For Impact!"	6/9/2018
Panelist, 2017 International Association of Societies of Design Research (IASDR) Conference College of Design, Architecture, Art and Planning, University of Cincinnati	"Design Access in Ergonomics and Interaction"	11/1/2017
School of Media and Design + Institute of Cultural and Creative Industry Shanghai Jiao Tong University Shanghai, China	"The Next Chapter of Industry and Business Collaborations in Design Education"	6/12/2017
International Design Institute Zhejiang University Hangzhou, China	"The Current and Future Innovation of Design Education"	6/9/2017
Panelist, 2016 IDSA National Education Symposium Detroit, Michigan	"Make Things Happen in Your Academic Career"	8/17/2016

Franklin Humanities Institute Duke University Durham, North Carolina	"Beyond Compulsion and Compliance: ADA and Universal Design"	9/15/2015
Universidad De Bogota Jorge Tadeo Lozano Bogota, Colombia	"The Future of Design Education"	7/28/2015
Milwaukee Institute of Art and Design Milwaukee, Wisconsin	"The Application of User Research in Product Design"	4/28/2011
National Taiwan University of Science and Technology Taipei, Taiwan	"From Curiosity to Reality, the Journey of User-Centered Design"	11/3/2010
Auburn University Outreach Scholarship Symposium Auburn, Alabama	"Creating Jobs by Creating Designed Centered Business"	4/22/2009
Alabama Art Education Association 2008 Conference Montgomery, Alabama	"Shaping Tomorrow's Products"	10/25/2008
Politecnico di Milano University Milan, Italy	"The Application of Universal Design Principles to Product Design"	3/28/2007
The Helen Hamlyn Research Center Royal College of Art London, United Kingdom	"Children's Play Product Designs Created with Universal Design Principles"	1/11/2007

Grants

"Eastman Studio" Naming	Eastman Chemical	\$50,000	2021
COVID 19 Research Grant	University of North Carolina System Office	\$75,000	2020
Bass Connections Grant	Duke University School of Medicine	\$20,000	2020
Industrial Design Studio Grant	Collins Aerospace	\$65,000	2019
2023 Climate Leaders Program Faculty Mentor	NC State University	\$5,000	2023
Eastman Innovation Lecture Series	Eastman	\$5,000	2022
Eastman Innovation Lecture Series	Eastman	\$5,000	2021
Eastman Innovation Lecture Series	Eastman	\$6,000	2020
Eastman Innovation Lecture Series	Eastman	\$13,000	2019
Eastman Innovation Lecture Series	Eastman	\$6,000	2018
Eastman Innovation Lecture Series	Eastman	\$10,000	2017
2015 IBM Corporation Faculty Award	IBM	\$19,000	2015

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Eastman Innovation Lecture Series	Eastman	\$10,000	2015
Graduate Student Recruitment Fund	Eastman	\$4,000	2014
2013 IBM Corporation Faculty Award	IBM	\$12,000	2013
Alabama Construction Industry Fund Research and Development Grant	Alabama Construction Industry Fund	\$168,000	2010
Competitive Outreach Scholarship Grant	Auburn University	\$61,000	2006

Articles In Journals & Proceedings (Refereed)

Polanco, Alexis Jr and Tsai Lu Liu (2023). "Uncovering an Inclusion Gap in the Design of Digital Assessments for Middle school-aged Deaf and Hard of Hearing Students in the United States." 14th International Conference on Applied Human Factors and Ergonomics (AHFE 2023) and the Affiliated Conferences; San Francisco

McLaughlin, Jacqueline; Chen, Elizabeth; Lake, Danielle; Guo, Wen; Skywark, Emily; Chernik, Aira and Tsai Lu Liu (2022). "Design thinking teaching and learning in higher education: Experiences across four universities." PLOS ONE, Published March 24, 2022: https://doi.org/10.1371/journal.pone.0265902

Liu, Meichun and Tsai Lu Liu (2022). "An Agent-Based Approach to Adaptive Design Based on Mediated Influences." Conference Proceedings, Design Computing and Cognition'22; Glasgow, Scotland

Noel, Lesley-Ann and Tsai Lu Liu (2019). "Introducing critical pedagogy through design thinking to primary school students in Trinidad and Tobago." Cultural and Pedagogical Inquiry, Volume 11

Noel, Lesley-Ann; Tsai Lu Liu and Traci Rose Rider (2019). "Fostering empathy through design thinking among children in rural Trinidad." Conference Proceedings, International Research & Education in Design Conference 2019; Lisbon, Portugal

Eftekhari, Farzaneh; Gill, Carolina and Tsai Lu Liu (2018). "Design Thinking Beyond Design Discipline: The Process of Knowledge Transfer." Conference Proceedings, Design Management Institute: 2018 Academic Design Management Conference; London, UK

Noel, Lesley-Ann and Tsai Lu Liu (2016). "Using Design / Design Thinking to Create a New Education Paradigm for Elementary School Learners." Conference Proceedings, 2016 Design Research Society 50th Anniversary Conference; Brighton, UK

Eftekhari, Farzaneh and Tsai Lu Liu (2016). "A Design Approach for Risk Communication, the Case of Type 2 Diabetes." Conference Proceedings, 2016 Design Research Society 50th Anniversary Conference; Brighton, UK

Sun, Yingying and Tsai Lu Liu (2016). "Product Portfolio Strategies in Industrial Design Education." Conference Proceedings, Industrial Designers Society of America (IDSA) National Education Symposium; Detroit, Michigan

Liu, Tsai Lu (2011). "A Comparison Study of the Application of Third-Person and First-Person Point of View Videography in Empathic Design Process." Conference Proceedings, 4th World Conference on Design Research, The International Association of Societies of Design Research (IASDR); Delft University of Technology, Delft, Netherlands

Liu, Tsai Lu (2011). "Do You See What They See? A New Approach to Video Ethnography." Conference Proceedings, Industrial Designers Society of America (IDSA) National Education Seminar; New Orleans, Louisiana

Pettit, Lauren and Tsai Lu Liu (2011). "More Meaning in Everyday Experiences: A User-Centered Approach to Interactive Product Packaging." Conference Proceedings, Industrial Designers Society of America (IDSA) National Education Seminar; New Orleans, Louisiana

Liu, Tsai Lu (2011). "Including People's Psychological Needs in Social Innovation." Conference Proceedings, Include 2011: International Conference on Inclusive Design: Royal College of Art, London, UK

Pettit, Lauren and Tsai Lu Liu (2011). "Interactive Product Packaging: The Future of Packaging Design." Design Principles and Practices: An International Journal, Volume 5

Liu, Tsai Lu (2010). "Beyond Physiological Needs, a Broader Spectrum of Universal Design's Focus on Hierarchy of Needs." Conference Proceedings, The Third International Conference for Universal Design; Hamamatsu, Japan

Reynolds, Alex and Tsai Lu Liu (2010). "The Study of Children's Emotional Responses and Its Application to the Redesign of the Traditional Dental Handpiece." Conference Proceedings, 7th International Conference on Design and Emotion: Illinois Institute of Technology, Chicago, Illinois

Liu, Tsai Lu (2010). "Stigmatization and Segregation: New Fronts of Universal Design." Conference Proceedings, Industrial Designers Society of America (IDSA) National Education Seminar; Portland, Oregon

Liu, Tsai Lu (2009). "Every Sheet Matters: Design Research based on a Quantitative User-Diary of Paper Towels." Design Principles & Practices: An International Journal, Volume 4

Liu, Tsai Lu and Foster Phillips (2009). "Vivisi: a system of musical illumination." Conference Proceedings, Include 2009: International Conference on Inclusive Design: Royal College of Art, London, UK

Liu, Tsai Lu (2008). "Design for Construction Workers: A Collaboration Project between Industrial Design and Building Science Education." Conference Proceedings, Industrial Designers Society of America (IDSA) National Education Seminar; Arizona State University, Arizona

Liu, Tsai Lu and Victoria Hannum (2008). "Integrating the Marketing Function into Industrial Design Education." Design Principles and Practices: An International Journal, Volume 2

Liu, Tsai Lu and Whitney Skinner (2008). "User-Centered Design Evaluation by Application of Biofeedback Technologies." The International Journal of Technology, Knowledge, and Society, Volume 4

Liu, Tsai Lu (2007). "A From-Disabled-To-Able Approach to the Universal Design of Children's Play Products." Conference Proceedings, Educational Seminar, Icsid (International Council of Societies of Industrial Design)/IDSA (Industrial Designers Society of America) World Design Congress; San Francisco, California

Liu, Tsai Lu and Mark Smith (2007). "A Research toward the Proposal of a Design Based Manufacturing Industry in the Black Belt Region of the United States." The Third International Conference on Technology, Knowledge, and Society; Cambridge University, UK

Liu, Tsai Lu (2007). "Creating Jobs by Managing Design in High Unemployment Communities." Conference Proceedings, International Conference on Design Management; Seoul, Korea

Liu, Tsai Lu (2006). "Everybody Can Play: Including Children without Disabilities in the Design of Pediatric Therapeutic Products." Conference Proceedings, The Second International Conference for Universal Design; Kyoto, Japan Liu, Tsai Lu (2005). "The Focus of Industrial Design Education: Perspectives from the Industry." Conference Proceedings, Industrial Designers Society of America (IDSA) National Education Conference; Virginia Polytechnic Institute and State University, Virginia

Liu, Tsai Lu and Victoria Hannum (2005). "Form Follows What Function?" Conference Proceedings, The Third International Conference on Planning and Design, College of Planning and Design; National Cheng Kung University, Taiwan

Liu, Tsai Lu (2005). "Beyond PhD., Expectation from American Design Industry." Conference Proceedings, Joining Force Design Research Conference, a seminar of 2005 World Design Congress, University of Art and Design; Helsinki, Finland

Invited Magazine Article

Tsai Lu Liu (2018). "A Design Discourse from On High." Innovation, 2018 Spring

Book Chapter

Noel, Lesley-Ann; Tsai Lu Liu and Traci Rose Rider (2020). Developing Thinking Skills in a 4th Grade Design Studio in Trinidad and Tobago. In: Neimann, Theresa; Jonathan J. Felix; Stacy Reeves; Elena Shliakhovchuk, editors. Stagnancy Issues and Change Initiatives for Global Education in the Digital Age. IGI Global; 2020. p.15-39.

Sponsored Research Innovation Design Projects:

Sponsors/Collaborators	Year	Project Areas
Lenovo	2023	Design for branding and human experience
SAS Institute	2023	User interface design and Al
Eastman	2023	Intelligent display systems
Laboratory for Analytic Sciences	2023	Al and User Experience
Recreational Equipment, Inc. (REI)	2022	Personalization of the shopper journey with Al
Eastman	2022	Automotive user experience
SAS Institute	2022	User interface design and data ethics
Lenovo	2022	Design for all
Eastman	2022	Sustainable packaging for cosmetic products
Bosch Home Appliances	2021	Smart cooking
Red Hat	2021	Autonomous vehicle experience design

Habitat for Humanity	2021	Furniture donor experience
Eastman	2021	An Eastman recyclable material's application to home appliances
United States Army Special Operation Command	2021	Confidential
National Security Agency	2021	Machine Learning user interface
Eastman	2020	Sustainable food and beverage packaging for takeout customers
Positive Distribution	2020	Inclusive design of shoelaces
SAS Institute	2020	Artificial Intelligence in data analytics' user experience design
Golf Pride	2020	Product experience of gold grips
SAS Institute	2019	Data literacy education of middle school students
Eastman	2019	3D-printed insoles of athletic shoes
Georgia Pacific	2019	Hand sanitization in high traffic public restrooms
Lenovo	2019	Collaborative work environment and systems
Duke University Center for Advanced Hindsight	2019	Education savings program for families in Ghana
Newmark Knight Frank	2019	Future of collaborative workspace
Advanced Auto Parts	2019	Machine Learning's application to customer experience enhancement
Cree Lighting	2019	Lighting experience enhancement in public areas
Coca-Cola	2018	Customer beverage experience in fast food restaurants
SAS Institute	2018	Conversational user interface
Technibilt	2018	Shopping carts for retail stores
Caterpillar	2018	Professional utility vehicles
SealedAir	2018	Boxing and labeling systems for shipping companies
Under Armour	2017	User experience of Under Armour Apps
National Civil Rights Museum	2017	Virtual Reality of MLK50 Exhibit in NCRM
Parata Systems	2017	Pharmacy automation systems
Lowe's Home Improvement	2017	Bedroom storage products and systems

SealedAir	2017	Online shopping's open-box experience of personal care products	
University of North Carolina Hospitals	2017	Postnatal care in hospitals	
Coca-Cola	2016	Customer experience of a new Coca- Cola product category	
NC Museum of Natural Science	2016	Museum experience for adolescent visitors on the spectrum	
SAS Institute	2016	User experience of SAS data analytics software users with visual challenges	
тті	2016	Garage products for Ryobi™	
Under Armour	2016	New product concepts based on video ethnography	
Victoria & Albert	2016	Inclusive design of shower trays	
LG Electronics	2016	Bluetooth speakers	
Coca-Cola	2015	Brand experience design for a new Coca- Cola product category	
Lowe's Home Improvement	2015	Residential garage products	
IBM	2015	Collaborative workspace	
Bosch-Siemens Home Appliances	2015	Residential dish washing	
ті	2015	Outdoor sports event products	
SAS Institute	2015	Data management user experience	
WebAssign	2015	Online learning experience	
Institute for Emerging Issues	2015	"Emerging Issues Commons" space design in NC State Hunt Library	
Hanes Brands	2015	Women's sports underwear	
Becton, Dickinson and Company	2014	Medical devices for diabetic patients	
ARCA	2014	Cash dispensing systems	
IBM	2014	Gamification of data analytics	
SAS Institute	2014	Visual data analytics	
Eastman	2014	A new Eastman material's product application	
TTI	2014	Mobility in construction sites	
Bioventus	2013	Ultrasound bone healing systems	
UNC Healthcare	2013	Toys for hospitalized children	
Bosch-Siemens Home Appliances	2013	Residential ovens	
JLG	2013	Lift systems for construction sites	
SAS Institute	2013	Gamification of data analytics	

Eastman	2013	Furniture with extruded polymers components	
Coca-Cola	2012	In-store brand experience	
Broan-NuTone LLC	2012	Universal Design of home appliance	
Johnson & Johnson	2011	Oral care products	
Generac	2009 - 2011	Portable generators and pressure washers	
Alabama Construction Industry Fund	2006 - 2011	Construction site tools and equipment, for better safety and efficiency	
Georgia Pacific	2007	Paper towel consumer behaviors	
Great Southern Woods	2008	Portable on-demand storage systems	
Auburn University College of Veterinary Medicine	2006	Wireless small animal electrocardiograph	
Hi-Star Co., Ltd	2006	Family game products	
Unlimited Play	2005	Inclusive playgrounds	
Spectrum Brands	2004	Packaging and branding of pest control products	

Services to the Universities

Chair, Department Head Advisory Committee	NC State University	2018 - 2023
NC State University Enrollment Planning Committee	NC State University	2018 - 2021
NC State University Tuition Advisory Committee	NC State University	2018 - 2023
NC State University Campus Design Review Panel	NC State University	2021 - 2023
NC State University European Center in Prague Advisory Board	NC State University	2022 - 2023
Search Committee for Senior Associate Dean, University College	NC State University	2023 - 2023
Chair, Search Committee for the Head, Department of Landscape Architecture and Environmental Planning	College of Design	2022 - 2023
NC State University Post COVID-19 Innovation Task Force for Research	NC State University	2021 - 2022
Search Committee for Senior Vice Provost for Instructional Programs	NC State University	2021 - 2022
NC State University Faculty Committee on Honorary Degrees	NC State University	2017 - 2020

Advisory Board, Doctor of Design Program	College of Design	2017 - 2023
Administrative Council	College of Design NC State University	2012 - 2023
NC State University Intellectual Property Committee	NC State University	2014 - 2020
Myers and Cornelson Professors of Distinction Search Committee	College of Textiles, NC State University	2021 - 2022
Search Committee for Vice Chancellor of the Division of Academic and Student Affairs	NC State University	2019 - 2020
Tenure and Promotion Review Committee	University College NC State University	2020
Chair, Search Committee for the Head, Department of Art and Design	College of Design	2019 - 2020
External Reviewer, Programs Review, Department of Textile and Apparel Technology and Management	College of Textiles NC State University	2019
Administrative Advisory Committee on Faculty Well- Being	NC State University	2015 - 2019
Search Committee for Director of External Faculty Awards and Recognition	NC State University	2019
Chair, Search Committee for Associate Director of Development	College of Design	2019
Sustainability Design Faculty Search Committee	College of Natural Resources, NC State University	2017 - 2018
Park Scholars Faculty Mentor	NC State University	2014 - present
Chair, Search Committee for the Head, Department of Landscape Architecture	College of Design	2017 - 2018
Faculty Search Committee, Doctor of Design Program	College of Design	2017 - 2018
Myers and Cornelson Professors of Distinction Search Committee	College of Textiles, NC State University	2017 - 2018
Director of Doctor of Design Search Committee	College of Design NC State University	2017
Executive Director of Development Search Committee	College of Design NC State University	2017
Watauga Medal Selection Committee	NC State University	2013 - 2017
Advisory Group, Building Future Faculty Program	NC State University	2015 - 2016

Marketing and Communication Director Search Committee	College of Design NC State University	2015
Advisory Council	Honors College Auburn University	2011 - 2012
Environment Design Program Chair Search Committee (Chair)	Auburn University	2012
Multicultural Diversity Committee (Chair)	Auburn University	2008 - 2011
Patent and Invention Disclosure Committee	Auburn University	2008 - 2012
Persons with Disabilities Committee	Auburn University	2007 - 2011
Competitive Research Grant Committee	Auburn University	2006 - 2008
Executive Committee	College of Architecture, Design & Construction Auburn University	2006 - 2007