

**Wayne Li**  
**Oliver Professor of Practice in Design and Engineering**  
**School of Industrial Design / School of Mechanical Engineering**

## **I. Earned Degrees**

### **STANFORD UNIVERSITY, PALO ALTO, CALIFORNIA**

*Fall 2003 - Spring 2005*

Masters of Science in Engineering, *Product Design*

**M.S. G.P.A.: 3.78**

Honors and Activities: Paul and Daisy Soros Fellowship for New Americans Finalist

*The Stanford Daily*, Managing Graphics/Graphic Design Editor

*ME115 Human Values in Design / ME116 Formgiving*, Teaching Assistant

### **COLLEGE FOR CREATIVE STUDIES, DETROIT, MICHIGAN**

*Fall 2001 - Fall 2002*

Continuing Education in Industrial/Transportation Design

**Cum. G.P.A.: 3.75**

### **UNIVERSITY OF TEXAS AT AUSTIN, AUSTIN, TEXAS**

*1993-1998*

Bachelor of Science in Mechanical Engineering, *with honors*, B.S. G.P.A.: 3.73

Bachelor of Fine Arts in Design, *with honors*, B.F.A. G.P.A.: 3.73

**Cum. G.P.A.: 3.73**

Honors and Activities: Design Division Junior Level Performance and Portfolio Design Scholarship; Ernest

Cockrell Jr. Scholarship Recipient; Tau Beta Pi Engineering Honors Fraternity, Texas Alpha Chapter; Pi Tau Sigma

Engineering Honors Fraternity, Texas Kappa Chapter; Accepted into University of Texas Plan II (Liberal Arts)

Honors Program; Legislator of proposed Dual-Degree Program at University of Texas; Texas Union Council-Fine

Arts Committee, Chairman; Alpha Lambda Delta/Phi Eta Sigma Honor Society, Chapter Vice President; National

Merit Finalist; Presidential Scholar Finalist

## **II. Employment History**

### **GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, GEORGIA**

*Fall 2010 –Present*

Leading public research and teaching institute ranked in the Top 5 in both Engineering and Design

**INDUSTRIAL DESIGN / MECHANICAL ENGINEERING – OLIVER PROFESSOR OF DESIGN**

- **Director of Innovation and Design Collaborative & Director of Transportation Design Lab.** Leads a design thinking and innovation initiative to bring more creativity and multi-disciplinary educational experiences to engineering education. Nationally funded research projects include creativity and design in online learning platforms, teaching engineering students to draw like designers, and a General Motors sponsored transportation design lab that looks into the interior and interaction designs for future automobiles and autonomous transportation.

### **WAYNE LI DESIGN, SAN FRANCISCO, CALIFORNIA**

*Fall 2010 –Present*

Design Consultancy specializing in consumer product, electronics, home retail, interface design and automotive spaces

**DESIGN CONSULTANT - PRINCIPAL**

- **Design consultancy specializing in user experience, interaction design and ethnography.** Established in late 2010, this design consultancy has already expanded with a strong list of clients that include home retail, transportation, green energy, and social media interface design clients. Also, participate on the advisory board of a web based data visualization firm (Juice Analytics) that specializes in making complex web data, easily accessible and understandable.

### **WILLIAMS SONOMA INC., SAN FRANCISCO, CALIFORNIA**

*Summer 2005 –Summer 2010*

Specialty Home Décor Retailer in Consumer Goods and Home Furnishings

**POTTERY BARN – PRODUCT DEVELOPMENT – Senior Designer**

Conceptualized and managed design of seasonal home products. Product collections range over several categories including Home Office, Clocks, SMART® Products, Consumer Electronics, Storage, Bed and Bath, Wall Décor, Fireplace, Lighting and Decorative Lighting.

- **Doubled comparative store sales across multiple product categories.** Created and developed a unique “digital lifestyle” line of products that generated +227% YOY growth in the Home Office category. Built strong new brand messaging and consistent visual language to support the collection, lifting the Electrics category by 247% in comparative sales. Worked with e-commerce department to engage fashion blogs and web media to reinforce the brand story around the lifestyle product.

- **Design vision established a new \$4M business and expanded markets.** Penned a unique single design that upon introduction beat planned projections by over 810% in the first three weeks of sale, earning easily \$1M in revenue within the first month. The single design outperformed the next two largest volume-producing collections combined in the Functional Accessories category.

#### **STANFORD UNIVERSITY, PALO ALTO, CALIFORNIA**

*Winter 2007 –Spring 2013*

Leland Stanford Junior University, leading private research and teaching institution

#### **DESIGN PROGRAM – APPOINTED LECTURER**

- **Educated and trained undergraduates in class sizes ranging from 5 to 43.** Fostered an optimum environment to maximize learning and tailored training based on each individual student’s assessed needs. Adept at presentations with large, demanding audiences. Student evaluations of course instruction (ME110: Visual Communication & Design Sketching / ME110B: Advanced Digital Media Techniques) consistently rank higher than the department faculty average.
- **Collaborated with faculty and staff to plan comprehensive accredited program degree requirements.**

#### **VOLKSWAGEN OF AMERICA, PALO ALTO, CALIFORNIA**

*Summer –Fall 2004*

Electronics Research Laboratory, center for electronics innovation and research for the North American Automotive market

#### **PRODUCT DESIGNER – INTERFACE DESIGN LEAD**

Led aesthetic and interface development of advanced instrument cluster product utilizing miniature light projection engine and cholesteric liquid crystal glass technologies. Leveraged these technologies to adapt interior application driven by user context and social activity. Served as technology officer and liaison to Simi Valley (Los Angeles) design studio.

#### **FORD MOTOR COMPANY, DEARBORN, MICHIGAN**

*Fall 1998 –Fall 2003*

Global Automotive Developer and Manufacturer

#### **CORPORATE DESIGN AND VEHICLE ENGINEERING – DESIGN STRATEGIST & PRODUCT DESIGNER**

Developed Ford corporate brand and vehicle differentiation strategies. Actively aligned marketing demographics with visual themes that resonated with customer interests. Coordinated nameplate narrative with global branding strategy through automotive interior component design.

- **Created and executed a design strategy that optimized engineering resources, leveraged global purchasing power and retained brand differentiation at a savings over \$40M.** Global Architecture (GAP II) radio systems utilized common components and volume purchasing, but flexible interfaces to standardize core radio systems and yet still allow each regional studio (Mazda, Lincoln, Jaguar etc.) their own branded interface.

#### **IDEO PRODUCT DEVELOPMENT, PALO ALTO, CALIFORNIA**

*Summer 1996*

#### **PRODUCT DESIGNER AND MECHANICAL ENGINEER**

Utilized multi-disciplinary skills in a team setting to innovate new product concepts at product design firm.

### **III. Honors and Awards**

- “Thank – a – Teacher” Spring 2017: ID3320 Recipient: CETL Teaching Award
- Design Intelligence: 30 Most Admired Educators 2015 (Nationally)
- Class of 1940 Course Survey Teaching Effectiveness Award (2014-5)
- FY2015 HHS Green Champions 2015: Honorable Mention: Local University Partnership with the CDC Quality and Sustainability Office (CDC)
- “Thank – a – Teacher” Fall 2012: ID3320 Recipient: CETL Teaching Award
- “Thank – a – Teacher” Spring 2013: GT2803 Recipient: CETL Teaching Award

### **IV. Research, Scholarship, and Creative Activities**

#### **A. Refereed Publications and Submitted Articles**

##### **A1. Published and Accepted Journal Articles**

- Tenets for the 21<sup>st</sup> Century Designer: *Design Intelligence Education Issue November/December 2014*, The American Institute of Architects.

- “Tenets for the 21<sup>st</sup> Century Designer.” *AIA Foresight Report: The Changing Context, Business, and Practice of Architecture 2014*. 9 June 2014.
- Hilton, E., Li, W., Hammond, T., Linsey, J., *Effectively Teaching Sketching in Engineering Curricula: International Journal of Engineering Education (Paper)* March 2017
- Hilton, E., Li, W., Hammond, T., Linsey, J., 2018, *Effectively Teaching Sketching in Engineering Curricula*. International Journal of Engineering Education- Special Issue from Clive L. Dym Mudd Design Workshop X, in press.
- Hyman, T, Li, W, *Engineering Intelligent Racing Concepts Using Design Research Methods*. World Journal of Engineering and Technology May 2018

## **A2. Conference Presentation with Proceedings (Refereed)**

- Persketchtivity: Learning to Draw in the Digital Era: WIPTTE 2015, You Try-It Paper; Fall 2015
- An Intelligent Pen-Based Educational Application for Design Sketching Instruction: WIPTTE 2015, Full Conference Paper Published
- EVA London 2016 Conference: *Persketchtivity: An Intelligent Pen-Based Online Education Platform for Sketching Instruction* July 2016
- IDETC 2016 Conference: *The Development And Effects Of Teaching Perspective Free-Hand Sketching In Engineering Design*. ASME 2016 International Design Engineering Technical Conferences And Computers And Information In Engineering Conference (IDETC 2016) Aug 2016.
- *Consistently Evaluating Sketching Ability in Engineering Curriculum: The Fourth International Conference On Design Creativity (4th ICDC)* Nov 2016
- *Improving the Sketching Ability of Engineering Design Students: 21<sup>st</sup> International Conference on Engineering Design (ICED17)* Dec 2016
- *Seven Metrics that Matter when Modeling Expert Sketching Ability* [ACM TiiS- 2016] Transactions on Interactive Intelligent Systems
- *Conquering the Cube: Learning to Sketch Primitives in Perspective with an Intelligent Tutoring System* [Expressive '17: ACM SIGGRAPH] Accepted May 2017
- Clive L. Dym Mudd Design Workshop X IJEE Conference [Ethan Hilton]
- Ferguson, D., Li, W., Weaver, J. et al. *Do Engineering Creativity/innovation Courses Impact Engineering Innovativeness?* 2017 IEEE Frontiers in Education Conference (FIE October 2017)
- *NSF 2017 STEM for All Video Showcase: NSF Research and Design for Impact*
- *Everyone Can Sketch: Reviving Hand Drawn Sketching with an Intelligent Tutoring System Designing Interactive Systems [DIS2017] HCI ACM Conference, Edinburgh, Scotland*
- *Engineering Drawing for the Next Generation: Students Gaining Additional Skills in the Same Timeframe* ASEE 17 Global Colloquium Conference
- CHI PLAY 2017 Student Game Design Competition: Juried Award Winner
- Hilton, E., Li, W., Hammond, T., Linsey, J. Aug 2018 “Back to Basics: Sketching, not CAD, is the Key to Improving Essential Engineering Design Skills.” *ASME 2018 International Design Engineering Technical Conferences and Computers and Information in Engineering Conferences- IDETC/CIE 2018*

## **A3. Other Refereed Material**

- Li, W., “2002 Ford Thunderbird: A Living Legend” Design Case Study, *Innovation, IDSA Quarterly Periodical*, pp. 180-184. 2002

## **B. Other Publications and Creative Products**

- Georgia Tech Alumni Association Magazine: “Dynamic Duos: These six Georgia Tech faculty-student pairs not only represent the best the Institute has to offer, but also illustrate how outstanding teachers and pupils can inspire each other to virtually limitless heights.” Summer 2017 | by Roger Slavens
- Sketchtivity.com: Online Learning / Sketching Platform: Published Fall 2017
- Persketchtivity.com: Online Learning / Sketching Platform: Published Fall 2015-17
- Thyssen-Krupp Elevators America. *Interior Elevator UI Design Concepts*. Transportation Design. 2013
- Stanford University. *ME110 Product Visualization: Online Course Program*: Published Course: Beta Testing online: Nuvana.org Platform / VPOL Stanford University. Spring – Fall 2013.
- SMART® Products. *Digital Lifestyle Brand*. 2007. Pottery Barn: Consumer Electronics Category. 2007-2011

- Bedford Recharging Station ®. *Home Office*. 2008. Pottery Barn Home Office Category. 2008-2010
- Advanced CLC/LCOS Instrument Cluster. *VW Electronics Research Group*. 2004. Volkswagen of America. 2004.
- GAP II Radio / HMI Architecture. *Global Ford Corporate Brand* 2003. Ford Motor Company. 1999-2003
- Nike Sunglasses. *IDEO Product Development*. 1996. Nike, Inc. 1996

## C. Presentations

- 2018 Georgia STEM/STEAM Forum: GA Dept. of Education: Oct 22<sup>nd</sup>, 2018: *Design Thinking in K-12 Education*, Athens, GA: Keynote Speaker
- CEISMC @ Georgia Tech STEAM Leadership Conference: March 23<sup>rd</sup>, 2018: *Incorporating Design Thinking into Curriculum*, Atlanta, GA: Invited Seminar
- *Everyone Can Sketch: Reviving Hand Drawn Sketching with an Intelligent Tutoring System* Designing Interactive Systems [DIS2017] HCI ACM Conference, Edinburgh, Scotland June 2017
- EVA London 2016: Presentation and Demo: Persketchtivity: An Intelligent Pen-Based Online Education Platform for Sketching Instruction: July 13, 2016
- Design Futures Council 2015: Leadership Summit on Innovation & Technology Jan 14-15<sup>th</sup>, 2015
- Google / Motorola Mobility: Expert Witness: Design Expert: Opinion writing on Invalidity and Infringement, including deposition: Jan 4<sup>th</sup>, 2015
- Global Innovation Summit 2015: Panel Discussion Feb 17-19, 2015
- VentureWell OPEN Conference March 20-21, 2015
- AIA – Minnesota: Creative Disruption Conference: Nov 13, 2015: *Tenets for the 21<sup>st</sup> Century Designer*.
- CoreNet Global: Innovation and Design Thinking October 16<sup>th</sup>, 2014
- Stanley Beaman & Sears: Design Thinking: Theory & Practice Sept 12<sup>th</sup>, 2014
- Johnson Outdoors New Product Development Process Conference April 29<sup>th</sup>, 2014
- Professional Education User Experience / Design Thinking Course:
  - Northrop Grumman (March 17<sup>th</sup>-18<sup>th</sup>) 2014
  - Northrop Grumman (August 6<sup>th</sup>-7<sup>th</sup>) 2013
- Northrop Grumman Innovation Summit: March 11<sup>th</sup>, 2014
- Glen Raven Inc.: R&D World Congress 2013: Oct 2-4<sup>th</sup>, 2013
- User Experience Community of Practice Presentation: Northrop Grumman IS Systems: Technology Expo June 11-12, 2013
- University of Texas at Austin, Austin, TX. *Distinguished Alumni Speaker Series*, 2008, 2009
- Institute for International Research: Brand Identity + Package Design Conference, Chicago, IL June 23-25, 2003. *Recent Transformation of Visual Trends in Concept Cars*

## D. Grants and Contracts

### D1. As Principal Investigator

Title of Project: Innovation and Design Collaborative - Director

Agency/Company: GT Foundation: Jim Oliver

Total Dollar Amount: \$1,275,000

Role: PI

Collaborators:

Period of Contract: 9/1/2013 – 6/30/2018

Candidate's Share: NA/Operating Budget

Title of Project: James L. Oliver, II Endowment: Advancing Multi-Disciplinary Design Thinking: Connecting Engineering and Design Education in the Colleges of Engineering and Architecture

Agency/Company: GT Foundation: Jim Oliver

Total Dollar Amount: \$206,470

Role: PI

Collaborators:

Period of Contract: 9/1/2013 – 6/30/2018

Candidate's Share: 100%

Title of Project: GM Human Machine Interface (HMI) Transportation Design Lab - Director  
Agency/Company: General Motors  
Total Dollar Amount: \$70,000  
Role: PI  
Collaborators: Dr. Bruce Walker (Psychology), Dr. Roger Jiao (ME), Jim Budd (ID/HCI)  
Period of Contract: 8/1/2015 – 6/30/2018  
Candidate's Share: NA/Operating Budget

Title of Project: Design Thinking Course: Professional Education Course  
Agency/Company: SunTrust Bank (Atlanta, GA)  
Total Dollar Amount: \$18,000  
Role: PI  
Collaborators: Scheller Executive Education  
Period of Contract: 12/12/2017 – 12/14/2017

Title of Project: User Experience & Design Thinking: Professional Education Course  
Agency/Company: Northrop Grumman (Huntsville, AL & Reston, VA)  
Total Dollar Amount: \$50,000  
Role: PI  
Collaborators: Professional Education  
Period of Contract: 8/6/2013 – 3/18/2014  
Candidate's Share: ~ 24%

## **D2. As Co-Principal Investigator**

Title of Project: PerSketchTivity- Empowering and Inspiring Creative, Competent, Communicative and Effective Engineers through Perspective Sketching  
Agency/Company: National Science Foundation  
Total Dollar Amount: \$200,853  
Role: Co-PI  
Collaborators: Dr. Julie Linsey (PI: ME)  
Period of Contract: 9/1/2014 – 9/1/2017  
Candidate's Share: ~ ½ summer salary

## **D3. As Senior Personnel or Contributor**

Title of Project: Rehabilitation Engineering Research Center on Supportive Technologies for Successful Aging with Disability  
Agency/Company: National Institute on Disability and Rehabilitation Research  
Total Dollar Amount: \$4,600,000  
Role: Advisor / Contributor  
Collaborators: Dr. Jon Sanford (PI)  
Period of Contract: 10/2013 – 9/2018  
Candidate's Share: ~ 1/3 summer salary

## **E. Other Scholarly Accomplishments**

- MetroTech: Transportation Data Analytics Startup: Advisory Board (Fall 2015 – present)
- Juice Analytics: Data Visualization UI Startup: Advisory Board (Fall 2011 – present)
- Nuvana.org: Online Education Startup: (San Francisco, CA) Consultant (Summer 2013 – Summer 2014)
- Armageddon Energy: Solar Startup (San Francisco, CA): Design Director: (Fall 2009 – Spring 2010)
- REV Motorcycles Startup (Canton, MI): Design Director (Fall 2000 – Fall 2001)

## **V. Teaching**

### **A. Courses Taught**

Sem. Year	Course No.	Course Title	No. of Students
Fall 2018	MGT8803	Introduction to Design Thinking	20
Fall 2017 – now	ID2325	User Centered Design Methods: Research	45
Spr 2017 – now	ID1419	Sketching + Modelmaking II	64-84
Fall 2016 – now	ID1418	Sketching + Modelmaking I	64-84
Spr 2015 – now	MGT4803	Designing for Shared Values	18-24
Fall 2010 – 2017	ID3320	User Centered Design Methods: Research	36-55
Fall 2010 – now	ME4182/ID4011	ME/ID Senior Capstone Design Studio	28-37
Fall 2013 – 2016	GT2803	Your Idea, Your Invention	25
Fall 2010 – now	ID8900 GRD	Master’s MID Project / Thesis	1-3

## B. Other Teaching Activities

List all other significant teaching activities, such as continuing education, new courses developed, laboratory experiments and instructional materials developed, participation in any Ph.D. Committees, and participation in any interdisciplinary teaching activities, etc.

- Continue to serve on Curriculum Planning Committee / Teaching Team for Your Idea, Your Invention Course: GT2803: freshman / sophomore GT1000 course at institute level.
- UX Professional Development Course: Further development of UX course on behalf of private / corporate client – Northrop Grumman. (\$25K OSP Proj#2206205059: \$9.5K to School of ID). Class taught 1<sup>st</sup>: August 8<sup>th</sup> 2013. 2<sup>nd</sup>: March 17<sup>th</sup>, 2014 followed by potential summer offering.
- Scheller Executive Education: Georgia Pacific Supply Chain Forum
- Scheller Executive Education: Innovation Management Consortium Program
- Scheller Executive MBA Program: Fall 2015 – Fall 2018
- Scheller Executive Education: People’s Bank of China
- Scheller Executive Education: Supply Chain Leadership Development Program
- Scheller Executive Education: Tsinghua University Public School of Finance
- Scheller Executive Education: Clorox Corporation Global Operations & Leadership Program
- Scheller Executive Education: Technology Development Program: Bank of America
- Scheller Executive Education: Argos: Supply Chain Excellence Program
- Scheller Executive Education: GE Power Systems: Supply Chain Excellence Program
- Scheller Executive Education: IT Transformation & Innovation Course: China Mobile
- Served on MS-HCI Faculty Committee: Advising Grad HCI student in joint research across ID and HCI
- Sustainability and Community Engagement Course: GT2803 (Beril Toktay & Ellen Zegura)
- Design + Marketing Course: GT4803 (w/ Omar Rodriguez Villa: Spring 2015)

## VI. Service

- CoD ID Faculty Search Committee: New hire Interactive Product and Prof of Practice (Fall 2017-Spr2018)
- CoD ID Faculty Search Committee: New hire Interactive Product and Prof of Practice (Spr 2016)
- Director of the Arts Institute Search Committee (Spring 2014)
- All Development Staff Meeting: Faculty Panel: Impact of Endowed Chairs and Professorships (Summer 2014)
- College of Architecture: Strategic Planning Committee: Institute Collaborations Chair (Fall 2013 – present)
- School of ID: Faculty Search Committee for HCI and Product Innovation Candidates (Spring 2014)