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OVERVIEW—

Bill Dresselhaus is currently President/CEO of Dresselhaus Group, Inc., a design and innovation management, education and execution consultancy. He is now also an Adjunct Assistant Professor in the Engineering and Technology Management (ETM) Department in the Maseeh College of Engineering and Computer Science (MCECS) at Portland State University in Portland, Oregon USA. Until the end of summer 2016 Bill was a Joint Invited Professor of Product Design and Design Management at the International Design school for Advanced Studies (IDAS) and the Mechanical and Systems Engineering Design (MSDE) Department at Hongik University in Seoul, Korea. In each of these venues, he has created courses and instructed “non-design”, design and engineering undergraduate and graduate students in the principles and processes of product design, design thinking, design management, and creative innovation.

Bill has broad, eclectic and extensive experience in many areas of business, design, and technology, especially in the product design, innovation management and product development arenas. He also has a passion for design education and training and for helping anyone from any background or discipline to understand, learn and practice the principles and processes of design thinking, design innovation, and product design and development.

Bill was one of the early product design practitioners in Silicon Valley, California in the 1970s. He was the second Product Designer at Apple Computer and later Manager of Product Design of the Lisa Division at Apple. He was the Principal Product Designer of the Apple Lisa computer, the forerunner of the Macintosh and Mother of the Mac. Bill was also Manager of Product Design and later Acting Director of Opto-Mechanical Design at InFocus Systems in Oregon and led product design teams there for three of the first market-leading digital media projector systems. He has worked with, for, managed, and/or hired some of the best design firms in the world such as IDEO, Ziba Design, Frog Design, RKS Design, Lunar Design and Stratos Product Development. His design and innovation clients include Apple Computer, InFocus, Hewlett-Packard, LG Chemical, Sun Microsystems, and many other high-technology companies. Bill has two masters degrees in engineering and product design from Iowa State and Stanford University respectively and executive industrial design training from Art Center College of Design in California. He currently consults, trains and teaches internationally for a variety of client organizations and produces design educational materials online.

SUMMARY: Bill's Core Background...

- BS/MS in chemical engineering (Nebraska and Iowa State Universities);
- MS in product design (Stanford University);
- Executive Graduate Studies in Industrial Design (Art Center College of Design);
- Eclectic 45-year experience in design, innovation, management and teaching;
- Been process engineer, product designer, mechanical designer, project/department manager, industrial designer, professor, publisher, graphic designer, biochemical technician, machinist, and model-maker.
- Principal Product Designer and Product Design Manager at Apple Computer;
- Director of Lunar Design Portland Office;
- Lead Product Designer and Product Design Manager/Director at InFocus Systems;
- CEO/Principal of Dresselhaus Group, Inc.
- 8.5 years as full-time product design and design management professor;
- 10 years as part-time design, management and STEAM instructor;
- Articles, workshops, seminars, lectures, and presentations on design and management;
- Listed as inventor on four US patents.

SUMMARY: Bill's Core Interests and Capabilities...

- Teaching product design, design innovation, design thinking and design management.
- Design visualization, simulation, presentation and communication.
- Teaching design thinking, product design and STEAM education for everyone.
- Developing educational content for design thinking, product design, and technology.
- Design and development of sustainable products and systems.
- Teaching anyone and everyone at all levels and backgrounds about design thinking.

PROFESSIONAL WORK EXPERIENCE—

President and CEO, Dresselhaus Group, Inc. (DGI): DGI offers design and innovation strategies, solutions, management, development, consulting and training internationally to a broad variety of industries, companies and organizations; DGI is also a product design, development, innovation and management consultancy specializing in industrial design, product engineering, design management and innovation facilitation and training serving international high-technology industries and business firms; it facilitates ideation, innovation, research and development for a broad variety of products, services, systems and experiences from concept through design and engineering to manufacturing and production; DGI also creates writing, research, development, design, publishing and marketing of books, manuals, training, materials, workshops and seminars on innovation and product development internationally. SF Bay Area, Irvine CA, Portland OR, and Seoul ROK; 1998-present.

Product Design and Industrial Design Manager/Director, InFocus Corporation: Designed with and managed a world-class team of designers, engineers and design outsources to facilitate cross-functional multi-million dollar projects of high-technology, award-winning and highly profitable best-in-class data/video projection systems; also was Acting Opto-

Mechanical Design Director, Product Design Group Manager, Lead Product Designer, and Project Manager; responsible for oversight of Design Documentation, Model Shops and MCADD Administration; was listed on one digital projector patent and two design awards. Wilsonville, Oregon USA; 1994-1998.

Director, Lunar Design, Inc., Portland Office: Managed a division of award-winning Lunar Design, a full-service, comprehensive industrial design and product development consultancy, headquartered in Palo Alto, California; developed and managed numerous high-technology and consumer product design projects, including an Apple Computer laptop. Portland, Oregon USA; 1991-1992.

Bill Dresselhaus Product Design and Dresselhaus Design Group: Left Apple Computer in late 1983 and started a product design and engineering consultancy in Silicon Valley that evolved from a small design firm, where Apple, IDEO and Lunar Design were primary clients, into a larger studio with more clients and extensive design projects; during these years also did stints in corporate design management at InFocus and Lunar Design. Redwood City, California and Portland, Oregon USA; 1984-1998.

Apple Product Design Consultant: After leaving Apple, was a design consultant to the Apple Product Design Group for approximately ten years thereafter on miscellaneous projects such as the Apple IIe, IIc, IIGS, and several desktop computers and PowerBook laptops, plus the secret Water Project. Silicon Valley, California USA; 1984-1993.

Manager of Product Design, Lisa Division, Apple Computer: Was one of the first in-house industrial designers and product designers at Apple Computer (Employee #316), at times working directly with Steve Jobs, Apple's cofounder; executed and managed industrial design, product design and mechanical design for numerous early Apple products; as Principal Product Designer designed and managed the product design for the Lisa Computer, the forerunner of the Macintosh and Mother of the Mac; also designed parts and components for the Apple II and Apple III computers. Cupertino, California USA; 1979-late 1983.

Product Design Engineer, Hewlett-Packard Corporation, Data Terminals Division: Was a product designer and mechanical designer on the development team for a sophisticated new thermal printer project at this progressive H-P division prior to being hired at Apple Computer. Cupertino, California USA; 1978.

Design Director and Account Executive, Peter Lowe and Associates: Executed, directed and managed a variety of industrial design and mechanical design projects for a prominent Silicon Valley design consultancy that developed work for consumer product and technology companies. Palo Alto, California USA; 1977.

Product Design Contractor, Clement Laboratories: Worked as an on-site contract product designer and industrial designer on numerous technology products from medical and laboratory devices to computer systems and peripherals for this well-known and pioneering Silicon Valley design consulting firm. Mountain View, California USA; 1976.

Free-lance Product Designer: Provided a variety of design services to local Silicon Valley industries, including product design, mechanical design, industrial design, graphic design and model making. San Francisco Bay Area USA; 1975.

Design Model Maker, Scale Models Unlimited: Was part-time design and development product model maker while attending Stanford University Masters Program in Product Design. Menlo Park, California USA; summer, 1974.

Production Machinist, Jerry Carroll Machining: Was part-time production machinist while attending Stanford University Masters Program in Product Design. Menlo Park, California USA; 1973.

Process Design Engineer, Fluor Corporation, Development and Design Divisions: Worked on a variety of chemical engineering design projects at Fluor from process concept designs and analyses to petroleum refinery process design. Los Angeles, California USA; 1969-1970.

Process Design Engineer, Monsanto Company: Was chemical engineering design trainee working on methanol and steam plant and refinery designs, analyses and computations. St. Louis, Missouri USA; summer (while at Iowa State University graduate school of chemical engineering), 1967.

Laboratory Research Assistant, University of Nebraska and Penn State University, Biochemistry Departments: Assisted professors in biochemical laboratory research and analysis; also assisted with published papers on saccharides analysis via paper chromatography with Dr. Pazur. Lincoln, Nebraska and College Station, Pennsylvania USA; summers of 1965 and 1966 (while a chemical engineering undergraduate and graduate student).

TEACHING EXPERIENCE—

Adjunct Assistant Professor, Department of Engineering and Technology Management, Maseeh College of Engineering and Computer Science, Portland State University (PSU): Teaches Introduction to Product Design and Introduction to Human-Centered Design undergraduate courses in the Design Thinking / Innovation / Entrepreneurship (DTIE) cluster at PSU. Portland, Oregon USA; September 2016-present.

Joint Invited Professor of Product Design, Mechanical Engineering and Intellectual Property, Hongik University, Seoul, Korea: Taught product design, design management, creative design engineering, design and innovation, and related courses to cross-functional graduate students at Hongik's International Design school for Advanced Studies (IDAS), to engineering design students at the Hongik University Department of Mechanical and Systems Design Engineering (MSDE), and design, innovation and design management to Korean law professionals in the Hongik Law School Master of Intellectual Property (MIP) program. In addition, worked with MSDE design education leadership to develop appropriate courses and curricula for product design and development, design thinking, and design management. Seoul, Korea; September 2009-August 2016.

Adjunct Faculty, Department of Technology and Society, State University of New York in Korea (SUNY Korea), College of Engineering and Applied Sciences: Taught Project Management to freshmen undergraduates and Design Thinking & Process for Managers for Korean POSCO management program for industry professionals. Seoul, Korea; 2013-2014.

Professor of Product Design and Design Management, Hongik University, Seoul, Korea: Taught product design, design management, design engineering, presentation skills, and related courses to cross-functional graduate students at Hongik's International Design school for Advanced Studies (IDAS); also taught design thinking and innovation process to engineering design students in mechanical engineering. Seoul, Korea; March 2008-August 2009.

Extension Instructor, Continuing Education School, University of California, Irvine: Taught various seminars on innovation, marketing, creativity, education and design to international professionals and educators from Brazil, Korea, USA, etc. Irvine, California USA; 2003-2006.

Adjunct Faculty, W. Averell Harriman School for Management and Policy at the State University of New York at Stony Brook, College of Engineering and Applied Sciences: Taught Marketing of High Technology Products and Technology Management Issues for Innovation for SUNY Korean MSTM program for industry professionals. Seoul, Korea; 2002-2004.

Visiting Professor, Institute for Industrial Policy Studies and aSSIST MSTM Program: Taught International Design Business Management and Marketing of Technology Based Products to Korean industry professionals for IPS joint Helsinki School of Economics EMBA program and SUNY MSTM graduate program. Seoul, Korea; 2002-2004.

Adjunct Faculty, Management in Science and Technology, Oregon Graduate Institute of Science and Engineering: Taught industrial design and product development management for courses in pilot STEEP Project for international Asian professionals and educators for three delegations from China. Beaverton, Oregon USA; 1998-2003.

Adjunct Faculty, Physical Science, Cascade College: Taught undergraduate Physical Science course. Portland Oregon USA; 1997.

Visiting Professor of Industrial Design, Induk Institute of Design: Taught industrial design and product design and development at South Korean design college through grant support from U.S. State Department (USAID); helped start IID Industrial Design Program, one of earliest in Korea. Seoul, Korea; 1974-1975.

Teaching Assistant, Product Design, Design Division, Stanford University: Design course Graduate Teaching Assistant and product design model shop manager in Stanford University Product Design Program. Palo Alto, California USA; 1972-1974.

Chemistry Instructor, Pepperdine University, Department of Chemistry: Instructor in General Chemistry teaching undergraduate chemistry courses and labs. Los Angeles, California USA; 1971.

Teaching Assistant, Iowa State University, Mathematics Department: Graduate Teaching Assistant in mathematics courses. Ames, Iowa USA; 1968.

UNIVERSITY LEVEL DESIGN COURSES DEVELOPED AND/OR TAUGHT—

Introduction to Creative Engineering Design
Basic Product Design & Development
Design Visualization & Simulation Methods
Green Product Design & Development
Interdisciplinary New Product Innovation
Presentation Skills for Design & Management
Human-Centered Design
Form & Esthetics for Engineering Design
Product Concept Design & Development
Integrated Design Planning & Development
Design & Innovation for Intellectual Property
Design Management for Intellectual Property
Advanced Engineering Design Studio
Product Service System Design for Engineering
Advanced Product Design Studio
Design & Innovation for PhDs
Teaching Innovation & Creativity in Engineering
Convergence Design & Development Process
Design Thinking & Innovation for Managers
Design Sketching, Rendering & Visualization
STEM Overview for Intellectual Property
Marketing of Technology Based Products
Design Theory, Philosophy & Culture
Design Practice & Professional Process

EDUCATION AND TRAINING—

Executive Special Graduate Studies in Industrial Design at Art Center College of Design. 1998.

Master of Science in Product Design, Stanford University. 1974.

Master of Science in Chemical Engineering, Iowa State University. 1969.

Bachelor of Science in Chemical Engineering, University of Nebraska. 1967.

Miscellaneous post-graduate courses in art, industrial design, model making, industrial technology, manufacturing methods, project management, CADD technology, materials and processes, design techniques and methodologies, design visualization, etc., from various educational venues.

Proficient in the following tools (Macintosh only):

Autodesk Fusion 360 CAD modeling;

Adobe Illustrator, Acrobat and Photoshop;

Apple iPhoto, Keynote, Pages, Numbers, iBooks Author, GarageBand and iMovie;

Capabilities in manual 2D sketching and making mockups, models and prototypes.

PUBLICATIONS—

Author, designer and publisher of *Apple's Lisa: A Product Design Story*, an Apple iBook of early Apple product design history and product design process based on Bill's experience as the Principal Product Designer of the Apple Lisa computer, the forerunner of the Macintosh. This iBook was released in September of 2017 on the Apple iBooks store and contains some information and images that few have previously seen. It is meant to be both a design history book as well as an educational treatment of the product design process that has changed little since the days of Lisa.

Author, designer and publisher of *ROI: Return On Innovation™*, a design management book on innovation in product design and development. *ROI* has been a design textbook at several colleges and universities in the US and Asia and was published in original print form in 2000.

ROI: Return On Innovation™ has been republished as an Apple® iBook®, revised and reorganized, and available at the Apple iBook Store or through the website, www.roibook.com.

The first English *ROI* book print version above was translated into a Korean version entitled, *ROI: Design Innovation 1.0®*, Volume 1, and published in Korea in 2004 by Ahn Graphics, and sold in bookstores such as the Bandi & Luni Bookstore in Seoul, Korea.

Bill and his team created an interactive Apple® iBook®, *Design Right by Autodesk®*, about teaching the fundamentals of basic engineering statics and about using the revolutionary Autodesk App, ForceEffect®.

Bill has written or been featured in a number of miscellaneous journal and magazine articles on design, product development innovation, design management and design education in such international magazines, journals and venues such as *ID Magazine* (USA), *Machine Design Magazine* (USA), *Innovation Magazine* (IDSA), *The Journal of Creative Management* (Korea), and *G-Colon Magazine* (Korea).

Bill is featured or mentioned as a key early product design innovator and leader at Apple Computer in several books about Apple and/or Steve Jobs, such as *AppleDesign: The Work of the Apple Industrial Design Group* by Paul Kunkel, *The Apple Revolution: Steve Jobs, the Counter-Culture, and How the Crazy Ones Took Over the World* by Luke Dormehl, *Design Like Apple* by John Edson, and *Make It New* by Barry Katz.

EXHIBITIONS—

In June/July of 2017 Bill's and his Apple Lisa team's work, plus more of Bill's work for both Apple and other high-technology companies, was exhibited at the famous Dongdaemun Design Plaza exhibit hall in Seoul, Korea, where an estimated nearly 10,000 people viewed it.

SPEAKING/LECTURE/SEMINAR/PRESENTATION/WORKSHOP ENGAGEMENTS—

Bill has given many lectures, speeches, seminars and workshops on design, innovation, education and management at numerous international venues such as:

- ROI book tour for SDRC/H-P (8 cities in USA + 11 cities in Asia for 20+ seminars)
- Center for Design & Business (USA/RISD; keynote)
- University of California at Irvine (USA; 4X; seminars/workshops)
- Institute for Software Research (USA; keynote)
- Institute for Industrial Policy Studies (Seoul; 4X; seminars/courses)
- University of Pennsylvania, Wharton Business School (USA; lecture/interview)
- University of California, Los Angeles (USA; panel)
- Parametric Technologies Corporation (PTC; USA; webcast)
- Korea Institute of Design Promotion (KIDP; Seoul/USA; 5X; design workshops)
- Seoul Design Olympiad (SDO; speech)
- Seoul Design Center (SDC; speech)
- IDSAs Design Conference (USA; 2X; presentations)
- IDSAs Local Chapters (USA; 2X; presentations)
- TEDx Seoul (Korea; presentation)
- Thomas Alva Edison High School (USA; workshop)
- TEDx Sookmyung University (Seoul; presentation)
- Chungbuk University (Korea; speech)
- Handong University (Korea; presentation)
- Hanyang University (Korea; speech)
- Yongnam University (Korea; presentation)
- Hongik University (Seoul; 3X; speech/presentation/workshop)
- Oregon Graduate Institute (USA; 2X; seminars)
- Portland State University Creative Studies Program (USA; workshop)
- ABEEK Engineering Education Organization (Korea; lecture)
- Innovation Center for Engineering Education (ICEE; Korea; 2X; lecture)
- International Conference on Software Engineering (ICSE; Hawaii; keynote)
- Amore Pacific Corporation (Seoul; innovation workshop)
- Pantech Corporation (Seoul; 3X; lecture/workshop/project)
- Intel Corporation (USA; seminar)
- Hyundai Motor Company (Korea; seminar)
- Kookmin University Business and Management School (Seoul; presentation)
- Stanford-IDAS Executive Program (Seoul; 2X; presentation/seminar)
- IDAS New Millennium CEO Conference (Seoul; presentation)

Interview on Korean Arirang TV program Heart-to-Heart (Seoul; interview)
Arirang Today Special Series (Seoul; interview)
Korea Craft & Design Foundation (Seoul; lecture)
Frisbee Apple Store (Seoul; presentation)
KAID Pin Upp Awards (Korea; 3X; jury)
Tokyo University of Science (TUS) MIP Department (Japan; 3X; lecture)
University of Tokyo IP Conference (Japan; 2x; speech/panel)
Intellectual Property Association of Japan (IPAJ) Symposium (Tokyo; lecture)
A+ Apple Store (Seoul; lecture)
Apple Design & Lisa Exhibit (Dongdaemun Design Plaza; Seoul, Korea; 2017)

DESIGN PATENTS—

Apple Computer Lisa computer design patent.
Apple Computer floppy disk bezel slot design patent.
InFocus Corporation LP210 projector system design patent.
TransFRESH Corp. atmosphere controller patent.

DESIGN AWARDS—

Multiple international design awards for InFocus Corporation's LP210, LP730 and LP750 Digital/Video Projection Systems.

UNIVERSITY AND PROFESSIONAL HONORS AND SOCIETIES—

Represented the Stanford University Design Division on the ICSID Japan Tour for three months in 1973.

Graduate Fellowship in Chemical Engineering at Iowa State University, 1968-1969.

O.J. Ferguson Award for Most Outstanding Senior Engineer at University of Nebraska, 1967.

Nominated and elected to the following university honor societies at University of Nebraska:

Member, Pi Mu Epsilon, mathematics honors society.
Member, Sigma Tau, engineering honors society.
Member, Phi Eta Sigma, academic honors society.
Member, Pi Lambda Epsilon, chemistry honors society.