# Berkeley 150W: Celebrating the Women of IEOR

## Keith McAleer

Berkeley Engineering has always been at the forefront of breaking barriers for women in the field. With several thousand women graduating from Cal with an education in engineering, Berkeley Engineering takes great pride in shaping women engineers who shape the world through their immeasurable contributions.

As Berkeley celebrates **150 years of women (https://150w.berkeley.edu/)** on campus, Berkeley IEOR recognizes some of the finest women affiliated to the department and hopes to inspire a new generation of industrial engineers and operations researchers.

**Lillian Gilbreth – Cal's first industrial engineer**

A woman well ahead of her time, Lillian Gilbreth was the inspiration for the mother character in Cheaper by the Dozen, a book written by two of her children – Frank and Ernestine. Lillian Gilbreth's work was closely aligned with the field of industrial engineering, even though she attended Cal nearly 60 years before the IEOR department was established. Graduating in 1900, and being the first female to speak at Cal graduation, Lillian went on to gain a PhD in psychology and focused the rest of her career in industrial and organizational psychology. She studied time, motion and fatigue to create ergonomic machinery for use in the household, in retail spaces and by factory workers. Joining Purdue University as the first female engineering faculty member, Lillian continued to offer services as a consultant during crucial stages of American history. During the great depression, Lillian assisted the nation on educational and employment strategies and during WWII, Lillian became the backbone that allowed integration of women into war work. An absolute superwoman, Lillian laid the foundation not only for successful women industrial engineers but set the tone for Berkeley IEOR to shape engineers working to make our world a better place.

**Dorit Hochbaum – Berkeley IEOR's first woman faculty member**

The first woman appointed to the Berkeley IEOR faculty, Dorit Hochabaum is a maestro in discrete optimization, network flows and integer programming. Having received a PhD from Wharton School of Business in mathematical programming, Dorit was appointed as an IEOR professor at Berkeley in 1981. Currently the head graduate faculty advisor in the department, Dorit has supervised several PhD theses and in the process, helped shape several successful careers in academia. Dorit's research work on data mining and pattern recognition is renowned worldwide. Recently, she has worked on problems related to homeland security through flow based pattern recognition algorithms, wherein she focused on detecting nuclear and security threats. To

commemorate her accomplishments, she was selected as an INFORMS fellow in 2005 and in 2011 she was awarded the INFORMS Computing Society prize for her work on algorithms for image segmentation. Further, in 2014 Dorit was also named a Society of Applied Mathematics fellow for her innovative application of approximation algorithms.

**Candace Yano – Berkeley IEOR's first woman department chair**

Serving as the IEOR chair from 1995 to 2003, Candace "Candi" Yano was the first woman to head the department. An MS and PhD recipient from Stanford University in operations research and industrial engineering, Candi held a position at Bell Telephone Laboratories before being appointed to Berkeley IEOR in 1993. Now serving a dual academic role as the Gary & Sherron Kalbach Chair in Business Administration at Haas, and as a professor in the IEOR Department, Candi was also the associate dean of academic affairs and chair of the faculty at Haas from 2016 to 2019. Candi's early research focused on analytical models for optimizing operational decisions and currently, she is interested in interdisciplinary problems at the interface between operations management and marketing. In recognition of her work, she was named an IISE fellow and INFORMS fellow, and won the 2008 WORMS Award for Advancement of Women in OR/MS. To cap it all, she also won the George E. Kimball Medal in 2018 for her distinguished service to the OR field.

**Rhonda Righter – IEOR professor and former department chair**

A professor, and department chair from 2008-2011, at the Department of Industrial Engineering and Operations Research, Rhonda Righter is a renowned academic. Having completed her Master's and Ph.D. in IEOR from Berkeley, Rhonda went on to teach at the Leavey School of Business at Santa Clara University before joining Berkeley IEOR. At Berkeley IEOR, not only has she carved an identity as a much-adored professor among students, but has also practiced her research interests in the general area of stochastic modeling and optimization, especially as applied to service, manufacturing, telecommunications, and grid computing systems. In addition to her engagements as a professor, Rhonda serves as an assistant editor for the *Journal of Scheduling*, and the INFORMS Service Science Journal and has also been the founding chair of the Applied Probability Society at INFORMS. Rhonda's work has received recognition from several sources. She has been awarded the IEOR Teacher of the Year award and has also won the IBM Faculty Award on two occasions. Furthermore, the impacts of her publications have been widely acclaimed.

**Barna Saha – Berkeley IEOR's newest member**

A recipient of the President's Early Career Award for Scientists and Engineers (PECASE), Barna Saha joined Berkeley IEOR in Fall 2019. With a PhD in computer science and experience as a research scientist at AT&T Shannon Labs, Barna's research interests include probabilistic methods, algorithm design and analysis, and large scale data analytics. Barna Saha is known for her work on fine-grained algorithm design leading to enhanced computation efficiency and practical solutions for a range of problems. Barna is the co-founder of Theoretical Computer Science Women (TCS Women) Organization and is an active proponent of diversity and equity in engineering disciplines. Among her various accolades include an Alfred P. Sloan Fellowship in 2019, an NSF Career Award in 2017 and Google and Yahoo Faculty Awards. While Barna's career is still young, her accomplishments are already noteworthy and Berkeley IEOR takes great pride in having her join its already illustrious faculty.

**Judith Kulich – IEOR board member at ZS Associates**

Judith Kulich serves as Managing Principal for ZS's San Francisco office. For many years, she has been the lead Principal for forecasting. Her primary focus is on supporting clients in making the right decisions through product development and launch, and on improving their forecasting capabilities and operations. She focuses on international forecast generation, platform development and capability building in the pharmaceuticals and biotechnology industry, and her assignments have included projects in the United States, Canada, Japan and Europe. Internally, Judith is also committed to serving as a leader in ZS's Women's Leadership Initiative, as well as the company's ZS Cares

program. Judith holds a B.S. in industrial engineering and operations research from the College of Engineering at the University of California at Berkeley, and an M.B.A. from the Haas School of Business at the University of California at Berkeley.

**Michelle Fisher – a Founder-CEO on the IEOR board**

Michelle Fisher is the CEO and Founder of Blaze Mobile, a 10-year-old Berkeley company developing mobile commerce, health care, banking, and advertising solutions. She has successfully raised millions of dollars in private financing for Blaze and has nearly fifty patents pending. Michelle has always had an innovative spirit — she sent a company her first product sketch when she was just 10 years old — and brought her entrepreneurial mindset to large companies before launching her own successful startup. After graduating from Berkeley IEOR in 1986, Michelle went on to earn a master's degree in operations research at Stanford and then considered starting her own business. She opted instead to get more experience first by working in large firms and spent a few years at Pacific Bell (AT&T) before starting her own venture.

**Judy Chou – Pharmaceuticals specialist on the IEOR advisory board**

Judy Chou serves as the president and chief executive officer at AbGenomics, a clinical-stage biotech company. Before joining AbGenomics, Judy worked with Bayer Pharmaceuticals where she was Senior Vice President and Global Head of Biotech and, concurrently, Site Head of Berkeley, California, since early 2017. In her current role, Judy is accountable for biologics manufacturing and development as well as pipeline development. She also serves as a member of the Board of Directors of Biocom and the Advisory Board of U.C. Berkeley College of Engineering and IEOR. Further, Judy is also on the Advisory Board of Silicon Valley Women in Engineering. With her many accomplishments, she was named one of The Most Influential Women in Business in the Bay Area in 2018 by San Francisco Business Times. Judy received her Ph.D. from Yale University in Biochemistry and Cell Biology.

**Diana Salazar – Berkeley IEOR staff member champions public service**

Industrial Engineering and Operations Research staff member for two years, Diana Salazar serves as the front office manager and finance analyst for the Department. In addition to her role with Berkeley IEOR, Dianza volunteers with a community group for which she was awarded the Chancellor's Award for Civic Engagement – Staff Award. Diana was nominated for her work to help lead and develop 'Moving Forward', a community group that serves underrepresented youth and community members in the City of Richmond, California. The Richmond community struggles with high rates of asthma, unemployment, poverty, linguistic isolation, housing prices and relatively low levels of education. Moving Forward is working to address some of these disadvantages by focusing on helping the youth prepare for college, cleaning up the physical environment in Richmond through community clean-ups, and by helping youth and citizens enjoy the environment and work on living a healthy & active lifestyle by organizing community hikes, race events, and free group fitness.

**Dashi Singham – IEOR almuna at the Naval Postgraduate School**

An associate professor in operations research at the Naval Postgraduate School, Dashi Singham received her Ph.D. in operations research from UC Berkeley in 2010. Dashi focuses on developing the methodology for analyzing data from experimental or simulation results and her areas of interest include finding optimal stopping rules to determine sample sizes, time series modeling, and uncertainty quantification. While being at the Naval Postgraduate School, Dashi has worked on the areas of healthcare and military applications and plans to move into the energy industry. She also teaches courses in simulation and statistics and has advised over 17 Ph.D. theses. As a graduate student at Berkeley, Dashi was awarded the National Science Foundation research fellowship for three years. Currently, along with her role as an associate professor at the Naval Postgraduate School, Dashi also actively engages with the larger industrial engineering and operations research community by serving as an assistant editor at IISE's Transactions publications and as the treasurer for the INFORMS Simulation Society.

**Wedad Elmaghraby – IEOR alumna at the University of Maryland**

A professor of operations management and management science at University of Maryland, College Park's Robert H. Smith School of Business, Wedad J. Elmaghraby completed her Ph.D. in Industrial Engineering and Operations Research from UC Berkeley in 1998. While also serving as the operations research and business analytics undergraduate committee chair, Wedad focuses on research at the interface of operations management, economics, and behavioral decision making. Her current research interests focus on the impact of market structure on the profitability and performance of business-to-business markets. Her current areas of application include online markets for the fashion sharing economy, online markets for excess inventory, energy markets, and the retail sector. In addition to her research work, she has served on the editorial board of *Management Science*, M&SOM and POMS and as the president of the M&SOM Society, the Behavioral Operations Section, and POMS College of Behavior in Operations Management. Before her PhD in IEOR from Berkeley, Wedad obtained her bachelor's degree in industrial engineering and economics from Cornell University.

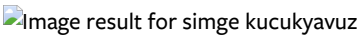
**Gemma Berenguer – IEOR alumna at Purdue University**

An assistant professor at Purdue University's Krannert School of Management, Gemma Berenguer was awarded her Ph.D. in industrial engineering and operations research in 2012. With a research focus on global health supply chains and nonprofit operations management, in her young career, Gemma has already carved a reputable identity for herself. She has been awarded research grants with industry partners including Adani ports and Procter & Gamble, has won the John and Mary Willis Young Faculty Scholar Award and has also received accolades for her published papers. Furthermore, Gemma continues to serve on the editorial board of the Production and Operations Management Journal. Gemma completed her undergraduate studies in Spain and then attended MIT's Zaragoza Logistics Center for a Master's degree in logistics and supply chain management before her Ph.D. Now, through her position at Purdue, she leads MBA level core and elective courses and has been honored with the Krannert School of Management's most distinguished teacher on numerous occasions.

**Gah-Yi Ban – IEOR alumna in the limelight at London Business School**

Gah-Yi Ban completed her MSc and PhD in Industrial Engineering and Operations Research and MA in Statistics from UC Berkeley in 2012 before obtaining a BSc in Physics and Mathematics from the University of Sydney. Following her education, Gah-Yi entered academia as an assistant professor of management science and operations at London Business School. In her role as an assistant professor for over nine years now, Gah-Yi teaches core courses across several programs at London Business School, while having co-developed the Global Business Assignment on Digital Disruption and Innovation in San Francisco. Gah-Yi's research is in big data analytics, where she specializes in decision-making with complex, high-dimensional and highly uncertain data with business applications, for which she has gained global recognition. Her article titled 'The Big Data Newsvendor: Practical Insights from Machine Learning' was the most read operations research article in 2019, and her work on personalized dynamic pricing through machine learning was awarded an Honourable Mention in 2018 INFORMS JFIG Paper Competition.

**Simge Küçükyavuz – IEOR alumna at Northwestern University**




Simge Küçükyavuz is an Associate Professor in the Industrial Engineering and Management Sciences Department at Northwestern University and an Affiliate Professor at the University of Washington. An expert in mixed-integer programming, large-scale optimization, and optimization under uncertainty, her theoretical results and algorithms have been applied to solve complex computational problems across numerous domains, including social networks, computing and energy infrastructure, statistical learning, and humanitarian logistics. Her research has been supported by multiple grants from the National Science Foundation and the Office of Naval Research. Simge also received the 2011 NSF CAREER Award and the 2015 INFORMS Computing Society (ICS) Prize. With a PhD and MS in Industrial Engineering and Operations research, Simge was a faculty member at the Ohio State University and the University of Arizona and a researcher at Hewlett-Packard Laboratories prior to her current appointment.

**Amy Wilson – IEOR graduate heading the Medical University of South Carolina**

Graduating with an MS and PhD in industrial engineering and operations research from UC Berkeley, Amy Wilson now serves as the Director of the Vale Institute at the Medical University of South Carolina. On completing her degree at Berkeley, Amy worked at The Boeing Company before joining UC San Francisco as a research associate for health policy studies. She then served as an assistant professor at University of Minnesota's School of Public Health for six years. Now in her role at the Medical University of South Carolina, Amy works as a healthcare analytics professional committed to improving the quality and decreasing the cost of healthcare. Through her past experiences, Amy has become a seasoned professional in driving performance for financial outcomes in healthcare. She focuses on conceptualizing and leading projects that integrate data from multiple sources and domains in innovative ways, leading to new insight and opportunities for performance improvement.

**Courtney Chow – A successful venture analyst from IEOR**

Courtney Chow graduated from UC Berkeley with a BS in Industrial Engineering and Operations Research and has since had a phenomenal career. Courtney is on the Investment Team at Battery Ventures, a multi-stage venture capital and private equity firm. She focuses on early- and growth-stage consumer-tech, software, and services companies. Previously, Courtney worked on the Business Operations Team at LinkedIn, where she led product strategy focused on member growth and user engagement. Before that, she worked on the Strategy and Operations Team at AmazonFresh, focused on supply chain management, inventory management, and operational strategy. Courtney also spent time as a venture design fellow at IDEO, prototyping venture concepts around IoT and Blockchain. She was also a venture analyst at Collaborative Fund, prospecting early-stage consumer investment opportunities.

**Paula Lipka – IEOR graduate specializing in energy generation**

Paula Lipka graduated with a PhD in industrial engineering and operations research in 2015. Her research focused on examining how to solve the optimal generator dispatch in real-time energy markets with a sequential linear approximation that includes the influence of reactive power on the power system and using this to provide better market information and transmission switching decisions. Before coming to Berkeley for her PhD, Paula obtained her bachelor degree from Harvey Mudd College and then a masters degree in industrial and operations engineering from University of Michigan. Following her PhD, she went on to work at Pacific Gas and Electric Company as a Quantitative Analyst, where her work was widely acclaimed. Then in early 2019, she moved to Lyft, where she works as a research scientist.

**Amanda Brief – IEOR's innovator par excellence**

A lifelong innovator, Amanda Brief founded my.Flow, Inc., a biotech company focused on women's health, with the overarching goal of reducing stigma and anxiety surrounding menstruation. Through my.Flow, Amanda has created the world's first tampon monitor (patent pending) to address the issues of period stigma, shame, anxiety, leakage, and risk of infection. With my.Flow being a HAX (hax.co) Startup Accelerator Batch 8 alum, Amanda hopes to focus on menstrual health. Amanda utilized this experience as an operations, product, and project manager, furthering her career within the entrepreneurship, innovation, and analytics spaces. She constantly benefits from the applied cross-disciplinary skills that her diverse academic and business background has cultivated. Amanda completed her Master of Engineering (MEng) at the University of California, Berkeley, in industrial engineering and operations research in 2015, combining business development and leadership with quantitative analysis and technical skills.

**Rendel Rieckmann – IEOR graduate heading Airbus' Secure Communications Business**

A master of engineering graduate in industrial engineering and operations research, Rendel Rieckmann now works for Airbus Defense and Space. Rendel serves as the head of secure communications business in Germany. Her role involves leading operations that ensure flexibility, resilience and security in communication for governments, militaries and civil agencies. Prior to doing her MEng coursework at UC Berkeley, Rendel studied industrial engineering and business management through Airbus' academic program at Nordakademie University in Germany. Soon after completing her

education, she worked with Airbus in an operations role for three years and then arrived at Berkeley. On her return to Germany, she was first posted as the head of solar array plants for satellites for two years, leading the research and development of solar technologies and their optimal production.

**Amber Richter – IEOR's Data Scientist at Google**

An industrial engineering and operations research PhD and MS degree recipient from UC Berkeley, Amber Richter began working for Google straight after finishing her academic coursework in 2016. As a PhD student, Amber conducted research with Professor Max Shen in disaster relief supply chain management, where her project involved dynamic relocation and inventory management of prepositioned disaster relief supplies. She was also awarded the National Science Foundation Predoctoral Research Fellowship for three years in her time at Berkeley. Now at Google, Amber works as a quantitative analyst on the operations decision support (ODS) team with a team that uses OR and advanced analytics tools to support decision making within Google's technical infrastructure. She is responsible to help support all aspects of the infrastructure from hardware inventory management and compute and storage resource utilization within data centers to capacity planning in Google's wide-area network.

**Yumi Oum – Berkeley IEOR represented at PG&E**

Yumi Oum graduated from Berkeley with a MS and PhD in industrial engineering and operations research in 2006. Since then, Yumi has held several roles at Pacific Gas and Electric Company and is currently posted as a senior manager for enterprise and operational risk quantification. Yumi completed her undergraduate studies in industrial engineering from Korea Advanced Institute of Applied Sciences in 2006 and then moved to Berkeley to pursue her graduate coursework. On completion in 2006, Yumi began her role as a senior quantitative analyst at PG&E where she performed analysis and provided support to various energy procurement activities. Gradually moving up the ladder, she was promoted to her current post of a senior manager. Through her journey at PG&E, Yumi has led a quantitative analysis team in energy policy modeling and analysis in energy policy procurement organization and also led the methodology and model development, implementation and execution of evaluating energy storage of various technologies and applications.

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