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Engineering & Scientific Consulting

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Professional Profile

Dr. Erica Lively is the practice director for Exponent's Data Sciences practice, where she assists clients with the design and execution of data acquisition programs using advanced sensors and oversees our capabilities in artificial intelligence, machine learning, data wrangling, data analysis, and forecasting, including quantitative risk assessment and data visualization. She applies this expertise to developing high-quality datasets for consumer products, wearables, and digitally enhanced clinical studies and helping clients use those data to build a safer, more equitable, and more technologically advanced world. Her work leverages multidisciplinary teams with expertise in life sciences, engineering, human factors, regulatory compliance, and litigation support to help clients acquire the highly complex data they need to be market leaders.

Skilled at designing, managing, and executing human participant studies using prototype and commercially available technology, Dr. Lively's experience helps clients build high-quality data sets used to develop products that perform for a wide variety of applications. She focuses on using methodologies that prevent data bias, collecting personal data with consideration for privacy, and managing the risks and resources associated with high-value data collection. Additionally, Dr. Lively has experience executing studies throughout design and validation cycles.

Dr. Lively holds a Ph.D. in Electrical Engineering from the University of California, Santa Barbara. Her graduate research focused on infrared lasers and detectors. In addition to her technical work, she has long focused on addressing issues surrounding technology from an interdisciplinary perspective. As a Science Policy Fellow at the National Academy of Engineering, she participated in studies to improve healthcare through the implementation of systems engineering tools. She has also studied the issues and implications related to media framing of emerging nanotechnologies.

Academic Credentials & Professional Honors

Ph.D., Electrical and Computer Engineering, University of California, Santa Barbara, 2012

M.S., Electrical and Computer Engineering, University of California, Santa Barbara, 2007

B.S., Electrical and Computer Engineering, University of Idaho, 2005

The National Academies Mirzayan Science and Technology Policy Fellowship, 2011

UCSB Electrical and Computer Engineering Department Dissertation Fellowship, 2010

Center for Nanotechnology and Society Science Fellow, 2006-2010

NASA Space Grant Scholar, 2002-2005

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Micron Scholar, 2003-2005

Professional Affiliations

Institute of Electrical and Electronics Engineers

Optical Society of America

Publications

Nguyen KN, Garcia JM, Lively E, Poulsen H, Baney DM, Blumenthal DJ. Homodyne dual-quadrature coherent receiver with injection-locked monolithically integrated local oscillator. Optical Fiber Communication Conference, OW3G, 2012.

Lively E, Conroy M, Weaver DA, Bimber B. News media frame novel technologies in a familiar way: Nanotechnology, applications, and progress. Social Life of Nanotechnology, 2012.

Nguyen KN, Garcia JM, Lively E, Poulsen HN, Bainey DM, Blumenthal DJ. Monolithically integrated dual quadrature receiver on InP with 30nm tunableSG-DBR local oscillator. ECOC, 2011.

Nguyen KN, Skahan PJ, Garcia JM, Lively E, Poulsen HN, Bainey DM, and Blumenthal DJ. Monolithically integrated dual quadrature receiver on InP with 30nm tunable local oscillator. Optics Express 2011; 19:26.

Nicholes SC, Mašanovic ML, Jevremovic B, Lively E, Coldren LA, Blumenthal DJ. An 8x8 InP Monolithic Tunable Optical Router (MOTOR) packet forwarding chip. IEEE Journal of Lightwave Technology 2010; 28(4):641-650.

Nicholes SC, Mašanovic ML, Jevremovic B, Lively E, Coldren LA, Blumenthal DJ. Large-scale photonic integration for advanced all-optical routing functions. Invited paper, Integrated Photonics Research, Silicon and Nano Photonics, 2010.

Nicholes SC, Mašanovic ML, Jevremovic B, Lively E, Coldren LA, Blumenthal DJ. Integration technologies for an 8x8 InP-based monolithic tunable optical router with 40Gb/s line rate per port. Invited paper, International Conference on Indium Phosphide & Related Materials, 2010.

Nicholes SC, Mašanovic ML, Jevremovic B, Lively E, Coldren LA, Blumenthal DJ. The world's first InP 8x8 Monolithic Tunable Optical Router (MOTOR) operating at 40 Gbps line rate per port. Paper presented at post-deadline session of Optical Fiber Communication Conference, PDPB1, 2009.

Lively E, Barton JS, Blumenthal DJ. Novel fabrication of sub-wavelength high aspect ratio metal/dielectric gratings on InP semiconductor platforms. Integrated Photonics and Nanophotonics Research and Applications, IWB2, 2009.

Weaver DA, Lively E, Bimber B. Searching for a frame: News media tell the story of technological progress, risk, and regulation. Science Communication 2009; 31(2):139-166.

Liang D, Fang AW, Chen H-W, Sysak MN, Koch BR, Lively E, Raday O, Kuo Y-H, Jones R, Bowers JE. Hybrid silicon evanescent approach to optical interconnects. Applied Physics A: Materials Science & Processing 2009; 95(4):1045-1057.

Fang AW, Koch BR, Lively E, Blumenthal DJ, Bowers JE. Distributed feedback and mode locked silicon evanescent lasers. Solid State Devices and Materials, 2008.

Fang AW, Koch BR, Jones R, Lively E, Liang D, Kuo Y-H, Bowers JE. A distributed bragg reflector silicon evanescent laser. IEEE Group IV Photonics, 2008.

Fang AW, Koch BR, Jones R, Lively E, Liang D, Kuo Y-H, Bowers JE. A distributed Bragg reflector silicon evanescent laser. IEEE Photonics Technology Letters 2008; 20(20):1667-1669.

Lively E, Blumenthal DJ. Simulation of sub-wavelength metal gratings for on-chip applications in optical communications. Slow and Fast Light, SMC6, 2008.

Fang AW, Lively E, Kuo Y-H, Liang D, Bowers JE. A distributed feedback silicon evanescent laser. Optics Express 2008; 16(7):4413-4419.

Fang AW, Lively E, Kuo Y-H, Liang D, Bowers JE. Distributed feedback silicon evanescent laser. OFC/NFOEC, presented at post-deadline session of Optical Fiber Communication Conference, PDP15, 2008.