Carolyn R. Duran, PhD

503.702.4716 ~ carolynrenee.duran@northwestern.edu
1734 SE Ladd Avenue, Portland, OR 97214

Leadership Summary

- Extensive leadership experience in engineering, regulatory, supply chain, and sustainability.
- Demonstrated complex problem-solving skills across multiple technical and commercial disciplines including semiconductor manufacturing, consumer electronics, memory, IO and commodities.
- Highly capable of leading large teams of diverse technical, regulatory, and commercial expertise.
- Demonstrated external leadership via Board service at the local and national levels.
- Able to develop and maintain relationships with critical governmental and external organizations as needed to drive corporate programs forward, including environmental agencies within the US and China, the US State Department, the Indonesian Ministry of Trade, the London Bullion Market Association, the World Gold Council, and leaders within the tin and gold industries.
- Able to influence within and across organizations and across industries and regulatory bodies to identify and drive towards a common goal.
- Excels at communicating complex subjects at a level commensurate with the audience, including peers, subordinates, upper management, and external organizations. Able to bridge regulatory, technical, and commercial environments.

Professional Experience

June 2023–Present: Apple, Inc., Cupertino, CA

Senior Director, Product Analysis and Compliance Engineering (June 2023–present)

- Leads a global team of >350 technologists spanning all primary engineering disciplines.
- Responsible for product safety, wireless regulatory and compliance, environmental technologies, electromagnetic compatibility, and advanced materials characterization and failure analysis for Apple's hardware products.

Apr 1998–June 2023: Intel Corporation, Hillsboro, OR

Vice President, Process Engineering, Components Research (March 2022–June 2023)

- Led a team of >75 experienced PhDs and technologists in advanced process and materials research.
- Led cross-organization strategy for global external engagements to advance and continue Moore's Law.

Vice President and Engineering Manager, Memory and IO Technologies (July 2017–March 2022)

- Led a large team of experienced engineers, architects and technologists responsible for a wide portfolio of Memory and IO technologies, driving technologies internally and externally through industry standards.
- Intel-wide charter covers strategy, architecture, standardization, validation, and ecosystem enabling.
- Managed a budget of ~$25M annually, including test and validation labs in MA, CA, OR and Taiwan.

Senior Director, Supply Chain Sustainability (Jan 2010–Jun 2017)

- Led Intel's overall leadership position supply chain sustainability strategy.
- Set strategic direction to align resources to areas where we can affect the most change in the supply chain, including but not limited to working hours, forced and bonded labor, worker health and safety, and supplier environmental practices.
- Chemical responsibilities not only included supplier compliance to regulations in each geography Intel operates, but also sensing and addressing future potential regulations to mitigate risk to technology development and implementation. Technical advisor on chemical regulatory issues in the supply line, including representing Intel with the EPA, EU, and China MEP. Testified on behalf of downstream scientific users of helium in the Senate Subcommittee for Energy and Natural Resources in May 2013. Testified on behalf of Intel in the House Subcommittee for Energy on Commerce in March 2014 panel on TSCA reform.
- Primary technical expert and external spokesperson for Intel's Conflict Minerals Program. Led worldwide program to deliver the first conflict-free microprocessors to market.

Supply Chain Lithography Commodity Area Manager (Feb 2014–June 2017)

- Led technologists responsible for developing and implementing leading edge lithography to enable Intel's patterning roadmap; led commodity management team negotiating contracts with a combined value >$1B.

- Provided commodity support for our global high-volume factory network addressing cost, quality and availability needs throughout the technology lifecycle.

Supply Chain Fab Materials Ramp Program Manager (Jul 2007–May 2015)
- Owned ensuring all chemicals used within Intel's global manufacturing facilities meet cost, quality, availability and technical requirements within the supply chain.

Technology Development (Apr 1998–Jul 2007)
- ***Wafer level test development Manager:*** Managed technical team driving technology development for three concurrent Intel process technologies. Ensured technical gaps were identified and closed, resources were allocated at the right level, and projects were prioritized to maximize efficiency without jeopardizing quality.
- ***Thin films Area Manager, Storage Technologies Group:*** Led experienced technical team supporting thin film process development and equipment operations for an advanced memory program, including material selection strategies. Provided technical expertise to solve complex problems in both fundamental materials science (metals, metal oxides and metal nitrides) and process integration.
- ***Individual contributor, Components Research/Portland Technology Development:*** Responsible for process development, new equipment selection and qualification, and sustaining module operations for the copper barrier/seed process covering three generations of interconnect technologies.

Sep 1993–Mar 1998, Research Assistant, Materials Science and Eng. Northwestern University Evanston, IL
- Extensive process development of metal-organic chemical vapor deposition of epitaxial high temperature superconducting thin films.

Feb 1993–Sep 1993, Process Engineer, Pennsylvania Metallurgical, Inc, Bethlehem, PA
- Optimized movement of material through available heat treatment furnaces to maximize loading and throughput. Utilized technical expertise in metals to determine appropriate processing conditions.
- Developed the company's first employee manual to standardize people management practices.

Jan–May 1991, Aug–Dec 1991, May–Aug 1992, Co-op Student, GE Aircraft Engines, Evendale, OH
- Conducted materials selection studies to select a graphite epoxy composite for use in the front engine blade of the GE90 commercial engine.
- Ran failure analysis testing on high temperature metal alloys to determine root cause of failed production parts.

Selected Community and Board Service

- Adjunct Professor of Materials Science and Engineering, Northwestern University, March 2021–present
- 2022 Materials Research Society President.
- External Advisory Board, The Ohio State University Center for Emergent Materials, NSF MRSEC, 2023-present
- Board of Directors, Responsible Business Alliance (Chair, 2017), Jan 2016–December 2017
- Steering Committee Chair, Conflict Free Sourcing Initiative, Jan 2015–Dec 2016
- Board of Directors for Relay Resources (formerly Portland Habilitation Center), Portland, OR, 2005–2017
    - Held multiple leadership positions on the board including Chair, Vice Chair, and committee leads
- Active member of multiple advisory boards for Materials Science and Engineering, 2003–present
    - Universities have included UC Berkeley, the Univ. of Michigan, Carnegie Mellon, and Northwestern
- ABET Program evaluator for Materials Science and Engineering, 2008–2014
    - Responsible for accreditation evaluations for university programs.

External Honors and Awards

- Named in Fast Company's "Most Creative People in Business 1000," Jan 2016
- Ranked #2 in Business Insider's "Most Powerful Women Engineers in the World," July 2014
- National Science Foundation Fellowship recipient, 1994–1996
- Graduate School University Fellowship, 1993–1994

Education

1998 – PhD in Materials Science and Engineering, Northwestern University, Evanston, IL
1992 – BS in Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA