The Chip Insider®
2019 All Stars and Hall of Fame

• All Stars of the Semiconductor Industry
  – Tim Archer
  – Sanchali Bhattacharjee & Dalia Vernikovsky
  – Judy Davies
  – Ajit Manocha
  – Michael Plisinski
  – Prabu G. Raja
  – Larry Smith
  – Lisa Su
  – Han Westendorp
  – Paul van Wijnen
  – Kate Wilson

• New Inductees to the SEMICONDUCTOR INDUSTRY HALL OF FAME
  – Tom Caulfield
  – John E. Kelly III
  – Julius E. Lilienfeld
  – Nicholas DeWolf
  – Robert H. Dennard
  – F.C. Tseng

• Semiconductor Industry Hall of Fame Members
VLSI\textsuperscript{research’s} \textbf{ALL STARS OF THE CHIP MAKING INDUSTRY}

• These are the executives who made the most of this year
• For some, it has taken several years of methodical execution to an overarching strategy to bring this year together
• For others it was about being fleet of feet
• They will tell you they are parts of bigger teams who really made it possible
  – It’s true, but these people took the point, making them the most visible for either adulation or the well-placed sniper’s bullet
• They have led the industry and their companies forward, for which we can all be thankful
**Tim Archer— All Star 2019:** For guiding Lam Research through its leadership transition in 2019, while successfully managing the memory cycle

- Tim has been a critical operational leader at Lam Research since the Novellus acquisition
  - With foresight to re-tool production and operations between memory and logic cycles
  - Profitability leadership during recent industry cycles
- His strong operational leadership has been a great foundation for him to grow into the CEO role
  - Making necessary changes to reflect his vision on relationships with customers, investors, and suppliers
- Lam Research has continued operational excellence under his leadership through the memory downcycle
Sanchali Bhattacharjee & Dalia Vernikovsky — All Star 2019: For tireless efforts to raise the visibility of the role subsystems and components play in yield
• They have been the driving force behind SEMI’s SCIS (Semiconductor Components, Instruments, and Subsystems) Special Interest Group that focuses on:
  – Identifying critical defectivity parameters
    • In components such as seals, filters, mass flow controllers, valves, sensors, shower heads, ion beam sources, etc.
    • Creating standards for common test methods to measure these parameters, improve traceability, and speed root cause analysis of excursions
VLSIresearch’s 2019 All Stars of the Semiconductor Industry

Judy Davies—All Star 2019: Developing and running the most innovative Corporate Communication programs among semiconductor equipment companies

• Judy is a magnificent communications leader with a knack for innovative positioning strategies. This is extremely important in the current 5G test battles raging through the industry
• Advantest has great results to show in 5G testing and Judy has been a critical part of the success
• As a corporate communications leader at Advantest, Judy has demonstrated the importance and value that innovative corporate communications brings to technology companies
Ajit Manocha— All Star 2019: Visionary leader at SEMI, restructuring the trade organization traditionally serving semiconductor manufacturing into broader electronics supply chain representation

- A tough but necessary transformation requiring unique industry relationships and skills to pull it off successfully
- Semiconductor manufacturing is becoming much more critical and interconnected with broader electronics markets
- Ajit is leading this transformation for the whole industry
Michael Plisinski— All Star 2019: The CEO who was finally able to pull off the long-evasive consolidation cycle among mid-size process control companies

- Rudolph Technologies and Nanometrics merger is long-predicted combination that brings together vital technologies and leadership in metrology and inspection
- This is an essential industry makeover that makes their inspection and metrology technologies stronger
- Mike had the business acumen and capabilities to pull this off for the benefit of customers and the industry
VLSI research’s 2019 All Stars of the Semiconductor Industry

Prabu G. Raja—All Star 2019: Market share dominance with Applied Materials Semiconductor Products Group through Memory and Logic Markets

- Prabu has been instrumental throughout his career at Applied Materials establishing market share leadership in non-lithography equipment segments
- His strong product management background is well suited to the tough job of running semiconductor products
- The results are outstanding with Applied Materials outrunning competition in 2019
Larry Smith—All Star 2019: The heart and soul of Tokyo Electron America operations and critical for major customer relations in North America
- TEL’s business performance has been outstanding with North American customers in 2019
- Larry has been a trusted equipment executive among customers delivering excellent results through his leadership
- Re-vitalizing Tokyo Electron’s business with smaller accounts for 200mm and trailing nodes in North America
- Demonstrating to the rest of TEL that there is meaningful business with older trailing technology fabs
Lisa Su — All Star 2019: Continued to lead in innovation and execution in 2019

- Developed first 7nm chiplet design
- Continued to push Moore’s Law cadence
  - Performance: CPU/GPU 2x every 2.25-2.5 years
  - Power: 2x every 3.6 years
  - Density: 2x every 3 years
  - Focusing on new ways to meet demand
- New 3rd Gen AMD Ryzen Threadripper desktop processors 4X the bandwidth of the 2nd Gen chip
- Attractive innovation allowed continued profitability against increasing silicon area cost
- Surfed the AI compute consumption wave
Han Westendorp—All Star 2019: Provided the steady hand to ASM International’s (ASMI) marketing that guided it into its strong position in the ALD market

- ASMI has been the leader in developing single-wafer ALD products for more than 15 years, and Han’s work in product management and marketing has been instrumental for this success
- Han’s strong product and technology background helped ASMI focus its thin film deposition products to meet the rapidly changing process technology challenges of customers
- His practical approach to a market-driven strategy has encouraged alignment of ASMI’s capability in high-precision process tools with the evolving needs of customers
Paul van Wijnen—All Star 2019: Influential in delivering a strong strategy background for ASML in all significant lithography segments

- Redefined the market intelligence relationships with customers and all industry stakeholders
- Building one of the industry’s best market intelligence organizations to support the most wide-ranging R&D programs to deliver EUV technology
- Comprehensive investor relations support program to make ASML one of the most respected companies in the industry
Kate Wilson—All Star 2019: Instrumental in developing and driving Edwards’ technology leadership through critical application development

• Kate’s drive, determination, and enthusiasm for understanding our industry technology challenges drove her to play a key part in setting up and leading the Edwards’ global applications group
• Her technology leadership is essential for understanding customers’ process challenges and translating them into viable vacuum and environmental exhaust management systems solutions
• Kate’s work has been critical not only for Edwards’ continued success, but more importantly for the success of customers
VLSIresearch’s
SEMICONDUCTOR INDUSTRY HALL OF FAME

• For executives who have made systematic contributions to the semiconductor industry*
  • Whose contributions advanced
    – Customers
    – Technology
    – Moore’s Law
    – Business Fundamentals
  • Without them, our industry would be much smaller
    – And would have had a much smaller impact on everyone’s lives around the globe

• Tom Caulfield
• John E. Kelly III
• Julius E. Lilienfeld
• Nicholas DeWolf
• Robert H. Dennard
• F.C. Tseng

* The Hall of Fame was opened up to contributors outside manufacturing in 2016. Please bear with us while we catch up with executives of historical interest.
New Inductee to VLSIresearch’s Semiconductor Industry Hall of Fame

**Tom Caulfield — HoF:** For pruning GLOBALFOUNDRIES to profitability and repositioning it to put applications before processes

- Tom brought back customer confidence in GF’s sustainability
  - Essential in the foundry model, because customer development windows are long and risky

- Pivot resulted in sustainable profitability
  - Rationalizing fabs and committing GF to “stay in it’s lane” as a manufacturing services company
  - The company had been built on an unsustainable dream of being on the bleeding edge
  - Even though Tom was the new exec on the job, he was an insider, which makes it even more remarkable
New Inductee to VLSIresearch’s Semiconductors Industry Hall of Fame

John E. Kelly III — HoF: For his visionary role in promoting deep partnering to avoid duplicative R&D costs and steer the industry out of the R&D crisis in the mid-nineties

- Dr. John Kelly is credited with coining the word ‘Coopetition’ to embrace the idea that competitors could cooperate on mutually-beneficial research
- He has a rare ability to excel in both technical and business domains, while linking both
  - For example, Kelly was one of the first to see Artificial Intelligence cognitive systems were ready to become a practical reality, sparking the worldwide explosion of AI research
New Inductee to VLSI Research’s Semiconductor Industry Hall of Fame

Julius E. Lilienfeld — HoF: For inventing and patenting the first FET semiconductor in 1926

- While the materials to make such devices were decades away from being ready, the Field Effect Transistor is the foundation of the modern semiconductor industry
  - Method and apparatus for controlling electric currents described the FET. U. S. Patent No. 1,745,175 (Filed in Canada on 22 Oct 1925 and later in the U.S. on 8 Oct 8, 1926 and issued 18 January 1930)
  - Device for controlling electric current described a thin-film version of the FET. U. S. Patent No. 1,900,018 (Filed 28 Mar 1928 and issued 7 Mar 1933)
  - Bell Labs would discover the point-contact transistor in 1948, though William Shockley had first researched it in 1939 at Bell Labs, in search of a solid-state replacement for mechanical solenoids in order to lower the cost of replacement
New Inductee to VLSIresearch’s Semiconductor Industry Hall of Fame

Nicholas DeWolf — HoF: The father of Automatic Test Equipment (ATE) is an industry legend
• Built the semiconductor ATE business, with Teradyne co-founder, Alex d’Arbeloff, out of this 1960 start-up
  – Nicholas was the engineering brilliance, setting a level of design excellence that remains a part of Teradyne’s DNA
  – His Cannons of Design for Production Test Equipment have stood the test of time

For more on this icon, click here: https://www.chiphistory.org/353-the-father-of-ate-automatic-test-equipment
New Inductee to VLSI Research’s Semiconductor Industry Hall of Fame

Robert H. Dennard — HoF: For making two of the most revolutionary contributions to the semiconductor industry
- Development of the DRAM in 1966
- Codifying how, “Transistor shrinks result in proportional power and/or performance gains” in 1974
  - This was the Power and Performance part of the PPAC equation that is often bundled into discussions of Moore’s Law
  - Today, Dennard’s Law lives on in spirit, as Performance and Power gains-per-node are still important, though they have come from Materials-Enabled Scaling* since <100nm

For more, click here: https://www.chiphistory.org/766-power-performance-in-ics-where-the-trend-started
New Inductee to VLSI Research’s Semiconductor Industry Hall of Fame

F.C. Tseng — HoF: For co-creating the "foundry only" semiconductor manufacturing business model with Morris Chang
• Dr. F.C. Tseng co-founded TSMC in 1987 with Dr. Chang
• While Chang developed the customer base, Tseng built the organization
• His superior sense for talent and superb management was what made the difference
  – Chang has said that TSMC’s early growth and success were largely due to the team Tseng built
VLSI Research’s SEMICONDUCTOR INDUSTRY HALL OF FAME

Aart de Geus (2012)  
Alex d’Arbeloff (1993)  
Amy Gold (2018)  
Andrew Grove (2016)  
Andy Bryant (2016)  
Arthur del Prado (1993)  
Arthur Zafiropoulo (1994)  
Barry Rapozo (2006)  
Bill Holt (2015)  
Bob Huston (2006)  
C. Scott Kulicke (1994)  
Charlie Sporck (2016)  
Dan Maydan (1996)  
Egon Putzi (2006)  
Eric Meurice (2008)  
F.C. Tseng (2019)  
Gary Dickerson (2006)  
Gary Heerssen (2012)  
Gary Patton (2016)  
Gordon A. Campbell (2016)  
Gordon Moore (2016)  
Haruo Matsuno (2014)  
Howard Moss (2018)  
Irwin Jacobs (2017)  
James Bagley (1994)  
James Morgan (1993)  
Jean LeMoin (1994)  
Jensen Huang (2017)  
Jerry Sanders III (2018)  
John E. Kelly III (2019)  
Jon Tompkins (1996)  
Julius E. Lilienfeld (2019)  
Karl Nicklaus (1994)  
Kazuo Ushida (2007)  
Ken Levy (1995)  
Ken Schroeder (1996)  
Kouichi Uehara (2007)  
Larry Sumney (2009)  
Lisa Su (2017):  
Mark Bohr (2006)  
Mark Durcan (2017)  
Martin van den Brink (2006)  
Mike Bradley (2013)  
Mike Cadigan (2008)  
Mike Polcari (2009)  
Mike Splinter (2007)  
Morris Chang (2016)  
Nicholas DeWolf (2019)  
Paolo Gargini (2009)  
Papken Der Torossian (1994)  
Patrick E. Haggerty (2016)  
Patrick Lam (2006)  
Paul Otellini (2017)  
Peter Wennink (2018)  
Randhir Thakur (2012)  
Ray Thompson (2006)  
Ray Stata (2018)  
Richard Blickman (2011)  
Rick Wallace (2018)  
Robert Boehlke (2005)  
Robert H. Dennard (2019)  
Robert Graham (1993)  
Robert Holzel (1993)  
Robert Noyce (2016)  
Robin Saxby (2017)  
Roger Emerick (1993)  
Sanjay Jha (2017)  
Shoichiro Yoshida (1993)  
Steve Newberry (2011)  
Sunlin Chou (2006)  
Terry Higashi (2005)  
Tetsuo (Tom) Tsuneishi (2015)  
Tokuo Kubo (1993)  
Tom Caulfield (2019)  
Toshio Maruyama (2009)  
Walt Mathews (1995)  
Winfried Kaiser (2008)  
Yasuo Naruke (2018)
All Stars of the Semiconductor Industry

Aart de Geus (15)  
Abdul Lateef (13)  
Ajit Manocha (19)  
Ali Salehpour (18)  
Andre-Auberton Herve (07)  
Andy Bryant (18)  
Archie Hwang (05)  
Arthur Zafiropoulo (93 96 12)  
Asher Levy (16)  
Atsushi (Art) Horiba (17)  
Barry Mayer (15)  
Bill Holt (13)  
Bob Bruck (12)  
Brad Mattson (96)  
Brian Krzanich (12)  
Brian Tafas (13)  
Bruno Guilmart (12)  
C. Scott Kilicke (95 96)  
Chandra Mouli (05)  
Charlie Lewis (96)  
Chris Koliopoulos (04 05)  
Chuck Del Prado (14)  
Cliff Hou (16)  
Dalia Vernikovsky (19)  
Dan Maydan (95 96)  
David Wang (93 96)  
Deirdre Hanford (17)  
Dennis P. McGuirk (13)  
Doug Grose (05)  
Egon Putzi (04)  
Eric Meurice (06 12)  
Erich and Aya Maria Thallner (14)  
Ernie Godshalk (04)  
Frits van Hout (15)  
Gary Dickerson (05 13)  
Gary Hillman (93)  
Gary Patton (12)  
Geoff Wild (13)  
Geert Follens (18)  
Gerald Z. Yin (18)  
Graham Miller (94)  
Gregory Smith (15)  
Han Westendorp (19)  
Haruo Matsuno (12)  
Hector Ruiz (08)  
Heinz Kundert (16)  
Herbert Blaschitz (14)  
Irwin Pfister (93)  
Israel Niv (94 11 15)  
J.K. Park (16)  
Jack Sun (16 14)  
James Bagley (93 95 96)  
James Morgan (95 96)  
Jan Lipton (93)  
Jean LeMoin (93 95)  
Jim Gentilcore (13)  
John Kelly (14)  
Jon Tompkins (95)  
Judy Davies (19)  
Karen McLennan (96)  
Kate Wilson (19)  
Kathy Price (96)  
Kazuo Ushida (07 18)  
Keith Barnes (08)  
Ken Levy (96)  
Ken Schroder (96 04)  
Kenneth L. Schroeder (95)  
Kevin Conlon (96 11)  
Larry Murphy (05 06)  
Larry Smith (19)  
Lee Wai Kwong (17)  
Lisa Su (19)  
Lucas van Grinsven (08)  
Luis Müller (17)  
Lynn Neillie (94)  
Mark Bohr (05 16)  
Mark Jagiela (14)  
Martin Anstice (12 14 15 17)  
Martijn Pierik (18)  
Mary Puma (14)  
Masaki Kato (11)  
Masashi Oka (18)  
Michael L. Parodi (94)  
Michael Plisinski (19)  
Mihir Parikh (95)  
Mike Cadigan (05)  
Mike Splinter (04 07 13)  
Mord Weisner (96)  
Morris Chang (11)  
Neil Bonke (96)  
Oh-Hyun Kwon (08)  
Omkaram (Om) Nalamasu (17)  
Paolo Gargini (08)  
Papkin Der Torossian (93 96)  
Patrick Lam (93)  
Patrick Lord (18)  
Paul Boudre (15)  
Paul Oetilini (08)  
Paul Rawlings (15)  
Paul van Wijnen (19)  
Peter Wennink (17)  
Prabu G. Raja (19)  
Randall Hughes (94)  
Randhir Thakur (11)  
Reinhart Richter (11)  
Richard Aurelio (04)  
Richard Blickman (07 18)  
Rick Wallace (06 15)  
Robert Akins (12)  
Robert Boelke (96)  
Robert Graham (94)  
Ross Young (94)  
Sanchari Bhattacharjee (19)  
Sanjay Jha (14)  
Sass Someckh (96)  
Sass Somekh (94)  
Seiichi Takikawa (94)  
Shoichiro Yoshida (95)  
Steve Deornellas (95)  
Steve Newberry (04)  
Sundar Ramamurthy (14)  
Terry Higashi (07 13)  
Tim Archer (19)  
Tim Moriarty (17)  
Tom Caulfield (16 18)  
Tom Kubo (96)  
Tom Newsom (96)  
Tom Sonderman (05)  
Tom Tsuneishi (14)  
Tony Kawai (17)  
Toshikazu Umatate (18)  
Tosho Maruyama (04)  
Trevor Norman, (12)  
Wally Rhines (15)  
Wasuke Nakano (05 06)  
Willem Marris (94)  
William Reed (95)  
William Spencer (93)  
Yaron Barkan (15)  
Yasushi Akao (11)  
Yoshiaki Yoshida (18)
Thank You

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