

## Constructive Feedback, Positive Influence

My Ph.D. research focused on the limits of power consumption and parameter variations at the circuit level. As an example of a Prof. Meindl teaching moment, I recall giving my first presentation at the weekly graduate students group meeting, where one student gives a talk on his or her research. I worked hard to prepare and felt confident about the presentation. As a young member of the group, I wanted to impress Prof. Meindl. During the presentation, he and the more experienced graduate students identified multiple issues with my research that I clearly needed to address. From my perspective, the presentation was a disaster!

I learned later that Prof. Meindl was excited and upbeat about how well the meeting went. Although I was shocked to hear this at the time, I later learned to appreciate Prof. Meindl's perspective with his vast expe-

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rience of mentoring graduate students before and after me. He viewed this meeting as a valuable growth opportunity for me. He knew the constructive feedback from this meeting would positively influence my future research, and he was right. His encouragement, guidance, and problem-solving skills enlightened my thinking about microelectronics research topics and beyond. He encouraged me toward the physical insights and key tradeoffs.

—Keith A. Bowman

### About the Author

**Keith A. Bowman** received his B.S. degree from North Carolina State University and his M.S. and Ph.D. degrees from Georgia Tech, all in electrical engineering. He is a principal engineer and manager at Qualcomm in Raleigh, North Carolina, USA.

## An Unconventional and Thoughtful Problem Solver

I was always in awe of the creative and carefully crafted way Prof. Meindl chose to represent ideas. For example, I remember, when I first started to study with him, he wanted me to illustrate the relationship between on-chip interconnect time delay and interconnect length. I came to my meeting with him with a plot of time delay versus interconnect length to illustrate this relationship, which I thought was an obvious choice; however, Prof. Meindl's thoughts were much more creative and insightful. He wanted to plot the reciprocal length squared versus time delay so that the diagonals in a log-log plot were loci of constant resistance per unit length and capacitance per unit length product.

This is just a small example of my first experience with the completely unconventional and thoughtful way Prof. Meindl approached problems.

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He had such intellectual gravitas that students listened attentively, and, with this hyperattention in hand, he kindly and respectfully helped them see a much deeper world of knowledge and way of thinking. I appreciate his helpfulness and willingness to meet with his students often. I know that his mindset and ethos will live on through the many people he has impacted.

—Jeffrey A. Davis

### About the Author

**Jeffrey A. Davis** is an associate professor in the School of Electrical and Computer Engineering at Georgia Tech, Atlanta, Georgia, USA. He is currently the faculty director for the Grand Challenges Living Learning Community, where he uses his passion for undergraduate education to train students to be entrepreneurial problem solvers to improve the human condition.

## Brilliant, Kind, Gentle, and Generous

I was simply fortunate to have Prof. Meindl as my Ph.D. thesis advisor and, later, professional guardian, role model, and mentor throughout my career. I have never met any person so brilliant and yet so kind, gentle, and generous to one and all. He had a way of inspiring those around him to strive for excellence and enjoy the journey with him. He instilled in me a work ethic and sense of integrity as well as the

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courage of conviction simply by living these rare values in everything he did every day—throughout his life. My wife Dipta and I will miss him dearly.

—Vivek De

### About the Author

**Vivek De** is an Intel fellow and director of circuit technology research at Intel Labs. He is responsible for providing strategic technical directions for long-term research in future circuit technologies and leading energy efficiency research across the hardware stack.