

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering

David D. Wentzloff, assistant professor of electrical engineering and computer science, Department of Electrical Engineering and Computer Science, College of Engineering, is recommended for promotion to associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

Academic Degrees:

Ph.D.	2007	Massachusetts Institute of Technology, Electrical Engineering and Computer Science, Cambridge, MA
M.S.	2002	Massachusetts Institute of Technology, Electrical Engineering and Computer Science, Cambridge, MA
B.S.	1999	University of Michigan, Electrical Engineering and Computer Science, Ann Arbor, MI

Professional Record:

2007 – present	Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
2004	Intern, Intel Corporation, Hillsboro, OR
1999 –2000	Intern, Ford Motor Company, Dearborn, MI

Summary of Evaluation:

Teaching: David Wentzloff is an energetic and outstanding teacher and mentor to students, at both undergraduate and graduate levels. Professor Wentzloff has received awards from students for his classroom teaching, along with stellar teaching scores every semester. He leads a large research group of eight Ph.D. students and has graduated three doctoral students as sole advisor, and another three as co-advisor. He also has advised a very large number of M.S. students (14) and undergraduate research projects (25) in the past five years. The latter number, in particular, is commendable and shows a commitment to students. Overall he has taught four different courses, including a major design experience course. He made significant revisions to two courses, and co-introduced a new graduate class on advanced circuit design. In all of these classes, Professor Wentzloff's Q1 and Q2 teaching scores have been superb, averaging 4.75 for Q1 and 4.89 for Q2. In 2010 he was named the Eta Kappa Nu Professor of the Year.

Research: Professor Wentzloff has made important contributions to a number of key problems in wireless connectivity for sensors and computing. These contributions dramatically reduce the size and improve energy efficiency of sensing systems and computing nodes. He is known for the ingenuity of his research. As an example, an antenna-referenced 60GHz transmitter scheme removes the need for a crystal reference, enabling a tiny self-contained system with an on-chip antenna. He has also pioneered the novel idea of recovering a timing-clock for a sensor node from the GSM beacon signal. He is a pioneer in the implementation of RF and analog circuits with digital gates. Professor Wentzloff has a solid track record of publication. He has published 12 archival journal papers and 37 peer-reviewed conference papers. He has a total of three papers in the highly prestigious International Solid State Circuits Conference (ISSCC) and eight papers in the top-tier IEEE Radio Frequency Integrated Circuits (RFIC) conference and IEEE Custom Integrated Circuits Conference (CICC).

Professor Wentzloff has raised almost \$11 million as PI or Co-PI. Proposals for which he is the principal investigator total more than \$4 million. It is impressive that the National Science Foundation (NSF) funds seven of these proposals. He is the recipient of a DARPA Young Investigator Award and was recently awarded an NSF Career Award.

Recent and Significant Publications:

- J. K. Brown, K.-K. Huang, E. Ansari, R. R. Rogel, Y. Lee and D. D. Wentzloff, "An Ultra-Low Power 9.8GHz Crystal-Less UWB Transceiver with Digital Baseband Integrated in 180nm BiCMOS," *IEEE International Solid-State Circuits Conference*, Feb. 2013.
- J. K. Brown and D. D. Wentzloff, "A Clock-Harvesting Receiver using 3G CDMA Signals in the 1900MHz-Band," to appear in *IEEE Transactions on Circuits and Systems II*, 2012.
- K. K. Huang and D. D. Wentzloff, "A 60 GHz Antenna-Referenced Frequency-Locked Loop in 0.13 μ m CMOS for Wireless Sensor Networks," *IEEE Journal of Solid-State Circuits*, Vol. 46, No. 12, Dec. 2011, pp. 2956-2965.
- Y. Park and D. D. Wentzloff, "A Cyclic Vernier TDC for ADPLLs Synthesized From a Standard Cell Library," *IEEE Transactions on Circuits and Systems I*, Vol. 58, No. 7, July 2011, pp. 1511-1517.
- Y. Park and D. D. Wentzloff, "An All-Digital 12 pJ/Pulse IR-UWB Transmitter Synthesized From a Standard Cell Library," *IEEE Journal of Solid-State Circuits*, Vol. 46, No. 5, May 2011, pp. 1147-1157.
- K.-K. Huang and D. D. Wentzloff, "A 60GHz antenna-Referenced Frequency-locked loop in 0.13 μ m CMOS for Wireless Sensor Networks," *IEEE International Solid State Circuits Conference*, Feb. 2011.

Service: Professor Wentzloff is a dedicated individual, providing an excellent balance of service within his department and to the broader technical community. He makes a deep commitment to all the activities in which he participates, with significant focus on student advising and mentoring both at the undergraduate and graduate levels. As an example, he played a leading role in the design and renovation of high quality office space for 36 graduate students. He is committed to increasing diversity in our student population through proactive recruitment and strong engagement in his own research program. He has served on numerous technical program committees for the leading conferences in his research area and on five NSF panels. He was guest editor of a special issue of the *IEEE Transactions on Microwave Theory and Techniques*. These activities demonstrate his strong commitment to the broader community as well as the community's respect for his involvement.

External Reviewers:

Reviewer A: "His work is innovative and impactful and he has demonstrated effectiveness in advising graduate students. He is a highly-regarded researcher that shows promise for continued excellence. He is a fine representative of EECS at the University of Michigan and I consider his case for promotion and tenure to be very strong."

Reviewer B: "...his work on the antenna-reference frequency locked loop demonstrated imagination and novelty...it represents the kind of daring and out-of-the-box research that has become less and less common due to constraints of the modern academic life."

Reviewer C: "The concept of the FLL is very novel, using an antenna as both the frequency reference and the transmitter. It's very well thought out and clever, and definitely 'outside of the box' thinking one would expect from a top academic."

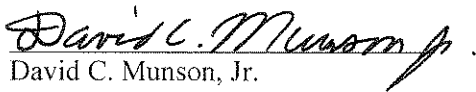
Reviewer D: "More than journeyman competence, a candidate for tenure must show potential for excellence---in his own ways that reflect his personality and life experience. I think Wentzloff does well

on both counts. His technical competences range from statistical modeling to analog circuit design, which places him well in the current crop of faculty [of his cohort].”

Reviewer E: “I have a high regard for his professional achievements and his continued potential for future excellence. My high regard for him is constructed primarily from his publications, but after having looked over his CV in detail in preparation for this letter, I find his record very strong in all areas of his profession. I feel his high level of demonstrated initiative and leadership as an Assistant Professor is rare.”

Reviewer F: “Overall, Prof. Wentzloff’s technical accomplishments and publication records are on par with the best professors [of his cohort] that I have seen and reviewed in the circuits and microwave area.”

Summary of recommendation: Professor Wentzloff is an outstanding researcher who is making important and fundamental contributions to wireless circuit design, and creating new ways to wirelessly communicate with sensors and computing nodes. He is an exceptional teacher, both in the classroom and as a research advisor. His service improves the lives of students and faculty. His service to the community goes well beyond that of a good citizen. It is with the support of the College of Engineering Executive Committee that I recommend David D. Wentzloff for promotion to associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.


David C. Munson, Jr.
Robert J. Vlasic Dean of Engineering
College of Engineering

May 2013