

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering

Michael Flynn, associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering, is recommended for promotion to professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

Academic Degrees:

Ph.D.	1995	Carnegie Mellon University, Electrical Engineering, Pittsburgh, PA
M.Eng.Sc.	1990	National University of Ireland (UCC), Cork, Ireland
B.E.	1988	National University of Ireland (UCC), Electrical Engineering, Cork, Ireland

Professional Record:

2006 – present	Associate Professor (with tenure), Department of Electrical Engineering and Computer Science, University of Michigan
2001 – 2006	Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
1997 – 2001	Part-time Lecturer (Adjunct Professor), National University of Ireland, Cork (UCC)
1997 – 2001	Fellow/Technical Director, Parthus Technologies, Cork, Ireland
1995 – 1997	Member of Technical Staff, Texas Instruments DSP R&D Lab, Dallas, TX
1993 – 1995	Resident Scholar, National Semiconductor, Santa Clara, CA
1990 – 1991	Research Scientist, National Microelectronics Research Centre, Cork, Ireland

Summary of Evaluation:

Teaching: Professor Flynn is an enthusiastic and dedicated teacher. He has both revamped existing courses and created entirely new ones, each with outstanding evaluations. The analog circuits curriculum at Michigan is very clearly shaped by Professor Flynn, and has record enrollments today which demonstrates his success. His course evaluations are very high, averaging 4.62/4.79 (Q1/Q2), and students in his courses cite his passion, approachability, and emphasis on enabling students to develop intuition about circuit design as major strengths. Professor Flynn currently leads a research group of ten Ph.D. students and has previously graduated eleven Ph.D. students at Michigan and twelve overall. His Ph.D. students describe him as inspirational, supportive, and focused on achieving breakthroughs in research and avoiding incrementalism.

Professor Flynn's outstanding efforts in this area have been recognized by the 2010-2011 College of Engineering John F. Ullrich Education Excellence Award.

Research: Professor Flynn is one of the world's premier scholars in the area of analog and mixed-signal integrated circuit and system design, with particular emphasis in analog-to-digital converters (ADCs). Several of his past projects are considered major breakthroughs by external reviewers, indicating the impact of his work in his chosen field. Specific examples of his research contributions include the first use of redundancy in analog circuits to overcome accuracy and speed bottlenecks, as well as the use of new ADC architectures such as log encoding and time-based digitization. His research balances fundamental circuit design advances and the building of complete systems that target some compelling multidisciplinary applications, such as in biomedical systems or infrastructure monitoring, on which he collaborates with applications researchers.

Professor Flynn has published 78 journal and strongly refereed (acceptance rates typically ~25% and equal in prestige to journals in his field) conference papers with an extremely high proportion of these papers published in top-tier venues, highlighting Professor Flynn's emphasis on quality in research. His funding base is excellent, having received ~\$6M in total funding during his 10 years at Michigan. He currently leads a large (\$3M) NSF project, is centrally involved with several other center-scale activities, and has considerable funding from industry, indicating the regard with which companies in his field hold him.

Recent and Significant Publications:

- S. Naraghi, M. Courcy, and M. P. Flynn, "A 9-bit, 14 μ W and 0.06 mm² Pulse Position Modulation ADC in 90nm digital CMOS," *IEEE Journal of Solid-State Circuits*, Vol. 45, No. 10, pp. 1870-1880, September 2010.
- J. Lee, H. Rhew, D. R. Kipke, and M. P. Flynn, "A 64 Channel Programmable Closed-loop Neurostimulator with 8 Channel Neural Amplifier and Logarithmic ADC," *IEEE Journal of Solid-State Circuits*, Vol. 45, No. 9, pp. 1934-1945, September 2010.
- M. Ferriss and M. P. Flynn, "A 14mW Fractional-N PLL modulator with a digital phase detector and frequency switching scheme," *IEEE Journal of Solid-State Circuits*, Vol. 43, No. 11, pp. 2464-2471, November 2008.
- J. Chen, M. P. Flynn, and J. Hayes, "A Fully Integrated Auto-Calibrated Super-Regenerative Receiver in 0.13 μ m CMOS," *IEEE Journal of Solid-State Circuits*, Vol. 42, No. 9, pp. 1976-1985, September 2007.
- N. Behdad, D. Shi, W. Hong, K. Sarabandi, and M. P. Flynn, "A 0.3mm² Miniaturized X-Band On-Chip Slot Antenna in 0.13 μ m CMOS," *IEEE Radio Frequency Integrated Circuits Symposium (RFIC)*, June 2007.

Service: Professor Flynn is active and highly visible in his external service duties, with membership on the editorial board of the top IEEE journal in his field as well as the technical program committees of the top two conferences. These are highly sought after positions in the circuits community, and his role in all of them was remarked upon by nearly all external reviewers as indicative of significant international visibility and reputation. Internally Professor Flynn has served for several years on the Electrical and Computer Engineering (ECE) Division faculty search committee, and led the successful recruitment of a junior colleague in analog integrated circuits. He also serves on the ECE executive committee, has been a thrust leader in the WIMS Engineering Research Center since 2003, and the academic advisor for the numerous MS students in his discipline for many years.

External Reviewers:

Reviewer A: "He is a world-class researcher and is recognized as such by his peers."

Reviewer B: "Prof. Flynn has left a wide footprint in the field of integrated circuits and systems..."

Reviewer C: "Prof. Flynn is internationally known for his work on analog and mixed-signal integrated circuits."

Reviewer D: "Prof. Flynn is a leader. His colleagues and the technical community look up to him."

Reviewer E: "He is absolute world-class!"

Reviewer F: "In his field, I would place him among the handful of top people at a similar stage in their career."

Reviewer G: "He is an exceptionally creative and productive scholar, and he is widely respected as one of the leading researchers of his generation in the field of analog and mixed-signal integrated circuit design."

Reviewer H: "I truly see that Prof. Flynn has a unique ability to provide leadership as demonstrated to me in the way he identifies the research need and then works to provide the research innovations to address them."

Summary of Recommendation: Professor Flynn is an internationally recognized leader in the design of analog and mixed-signal integrated circuits and systems. He has been vital in the recent prominence of the Michigan circuits program, both through his highly visible research program and in his development of the excellent analog circuits curriculum. It is with the support of the College of Engineering Executive Committee that I recommend Michael Flynn for promotion to 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

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