PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Electrical Engineering and Computer Science

Christopher J. Peikert, 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.	2006	Massachusetts Institute of Technology, Electrical Engineering and Computer Science, Cambridge, MA
M.S.	2001	Massachusetts Institute of Technology, Electrical Engineering and Computer Science, Cambridge, MA
B.S.	2000	Massachusetts Institute of Technology, Mathematics, Cambridge, MA
B.S.	2000	Massachusetts Institute of Technology, Electrical Engineering and Computer Science, Cambridge, MA

Professional Record:

2015 – present	Associate Professor (with tenure), Department of Electrical Engineering and Computer Science, University of Michigan
2014 – 2015	Associate Professor (with tenure), College of Computing, Georgia Institute of Technology, Atlanta
2009 – 2014	Assistant Professor, College of Computing, Georgia Institute of Technology, Atlanta
2006 – 2009	Computer Scientist, Computer Science Laboratory, SRI International, Menlo Park, CA

Summary of Evaluation:

Teaching: Professor Peikert has taught ten courses since coming to Michigan: EECS 376 (Foundations of Computer Science), two times; EECS 475 (Introduction to Cryptography), two times; EECS 575 (Advanced Cryptography), four times, and two different versions of EECS 598 (Special Topics). His teaching scores are excellent, with 4.7 his lowest Q2. Student letters further confirm Professor Peikert's excellence in teaching, such as his knack for explaining highly complex, mathematically-intense concepts so that even those without extensive experience in theoretical computing can understand. Other students comment upon his patience, respect for others, and enthusiasm for the field.

Professor Peikert publishes extensively with his graduate students at top venues. One recently graduated student, earned Honorable Mention in the 2019 ProQuest Dissertation Award competition. He has graduated six Ph.D. students to date (three since joining Michigan, including one in Fall 2020), and currently advises three Ph.D.'s plus a post-doctoral scholar.

Research: Professor Peikert is a high-caliber computational theorist and international leader in the field of lattice-based cryptography. His group has contributed significantly to programming frameworks for cryptography. Professor Peikert has a sustained record of funding to support his group. He currently is a co-PI on one DARPA grant, has an additional DARPA grant under review, and holds an NSF grant to study lattice problems in cryptography. He has previously received several other NSF grants, as well as funding from sources including Google and IARPA, and is also a Sloan fellow. Professor Peikert's work has earned him numerous awards from the crypto and general theory research communities, including Best Paper at the 2009 STOC Conference, and at the 2010 EuroCrypt Conference. He was awarded the Test of Time Award in 2017 by the Theory of Cryptography Conference. The impact of Professor Peikert's work is evidenced by his h-index of 45 and over 14,000 citations to his published research.

Recent and Significant Publications:
E. Crockett, C. Peikert, C. Sharp, "Alchemy: A Language and Compiler for Homomorphic
        Encryption Made easY," *Computer and Communications Security*, 18, 2018.
C. Peikert, A Decade of Lattice Cryptography, Now Publishers, 158, 2016.
C. Peikert, S. Shiehian, "Noninteractive Zero Knowledge for NP from (Plain) Learning with
        Errors," CRYPTO, 22, 2019.
C. Peikert, O. Regev, N. Stephens-Davidowitz, "Pseudorandomness of Ring-LWE for Any Ring
        and Modulus," *Symposium of Theory of Computation*, 27, 2017.
C. Peikert, Z. Pepin, "Algebraically Structured LWE, Revisited," *Theory of Cryptography
        Conference*, 19, 2019.

Service: Professor Peikert has served the department, the college, and his research community well, and in a variety of ways. At the department level, Professor Peikert has served as an undergraduate advisor on the Graduate Admissions Committee, and on the Fischer Chair Task Force. He has served as Theory Lab director and on the tenure track Faculty Search Committee, the latter of which he is currently chair. It is worth noting that, as chair of Faculty Search, Professor Peikert is implementing several new measures to increase diversity in CSE. These measures include becoming more involved in CRA's Women and Underrepresented Minority grad cohorts, and developing systematic processes for recruiting and developing support for Presidential Post-doctoral Fellowship applicants. Externally, he regularly contributes to the organization of cryptography and general theory conferences and workshops, including STOC, FOCS, EuroCrypt, and CRYPTO. He chaired the 2019 IACR Fellows Committee. Currently, Professor Peikert serves in a prominent leadership role as co-chair of the CRYPTO2021 Conference.

External Reviewers:
Reviewer A: "Chris' work is outright impressive both in terms of quality, i.e. the results he has obtained, and the sheer quantity of such fundamental results. It is difficult to overstate Chris' contribution to the fields of lattice-based cryptography and complexity of lattice problems..."

Reviewer B: "...Chris is amazing, and I view this letter as a mere formality. So I will make it rather short, simply because there is no controversy, or any shred of doubt about his promotion; along any dimension, from him being a fantastic theoretical cryptographer, to his influential applied work and participation in standards, to his great presentation skills, and finally his overall

likeness as a very nice person. In short, he has it all, and has my fullest support."

Reviewer C: "As an undisputed leader in lattice cryptography, an area of increasing importance both in the theory of computation and application to computer security, Peikert substantially enhances the prestige and intellectual status of your department... Most of this peer group are already full professors at top universities, so Peikert would certainly be considered for full professorship in these departments, including my own..."

Reviewer D: "He is an outstanding researcher, excellent teacher, exceptional colleague, and a great asset to any department. I could continue with his high citation count and other bibliometric measures, as well as his impressive record of receiving grants, and more. However, these are self-evident, and are additional factors that make it easy to see that Professor Peikert is unequivocally deserving of this promotion."

Reviewer E: "Chris is an extremely bright scholar who is willing to tackle difficult problems and devote the necessary time and effort required to address them properly. He is interested in big challenges rather than small fry. Several times during his career he surprised me in coming up with solutions to problems I thought were not within reach of 'current technology.'"

<u>Summary of Recommendation</u>: Professor Peikert is an established leader in computer theory with demonstrated leadership in teaching, research, and service. It is with the support of the College of Engineering Executive Committee that I recommend Christopher J. Peikert for promotion to professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

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Alec D. Gallimore, Ph.D.
Robert J. Vlasic Dean of Engineering
College of Engineering

May 2021