

PROMOTION RECOMMENDATION

**The University of Michigan-Dearborn
College of Arts, Sciences, and Letters
Department of Mathematics and Statistics**

John H. Clifford, assistant professor of mathematics and statistics, Department of Mathematics and Statistics, College of Arts, Sciences, and Letters is recommended for promotion to associate professor of mathematics and statistics, with tenure, in the Department of Mathematics and Statistics, College of Arts, Sciences, and Letters.

Academic Degrees:

B.S. 1988	University of Puget Sound
M.S. 1990	Western Washington University
Ph.D. 1998	Michigan State University

Professional Record:

2000-present	Assistant Professor, University of Michigan-Dearborn
1999-2000	Visiting Assistant Professor, University of Michigan-Dearborn
Fall 1998	High School Teacher, Allen Park High School
Summer 1998	Adjunct Faculty, University of Michigan-Dearborn
1997-1998	Visiting Faculty, Michigan State University

Summary of Evaluation:

Teaching: Professor Clifford's teaching is rated as excellent. He has taught eleven different mathematics courses while at UM-Dearborn covering a wide range of topics from the entire upper calculus sequence to wavelets and even introductory statistics. Professor Clifford developed the wavelets course. (Wavelet expansions compete with Fourier expansions and more generally with the many orthogonal systems that lead to Fourier style expansions.) He also teaches Survey of Geometry, a course required of secondary mathematics education students that can be used as an elective by other mathematics majors. This is a challenging course that few faculty have taught over the years, yet he was both willing and eager to meet the challenge because of his diverse mathematical interests. Students view him very favorably as a strong mathematician who presents rigorous courses.

Research: Professor Clifford's research is rated excellent. His focus of research is in pure mathematics in the area of composition operators on Hilbert Spaces. The Hilbert spaces are typically sets of functions analytic on the open unit disk. Professor Clifford has published four papers in refereed journals. The Committee was very positively impressed by the quality of journals, the lengths of papers, and the very favorable comments of the reviewers both with respect to the papers themselves and the potential for future research.

Recent and Significant Publications:

Clifford, J. and Michael Dabkowski, Singular values and Schmidt pairs of composition operators, Journal of Mathematical Analysis and Applications, 2005, v. 305, no. 1, 183-196.

Clifford, J, D. James, M. Lachance, and Joan Remski, A constructive approach to singular value decomposition and symmetric Schur factorization, *American Mathematical Monthly*, 2005, v. 112, no. 4, 358-363.

Clifford, J and D. Zheng, Composition operators on the Bergman spaces, *Chinese Annals of Mathematics*, 2003, v. 24B, no. 4, 433-448.

Clifford, J and D. Zheng, Composition operators on the Hardy space, *Indiana University Mathematics Journal*, 1999, 1585-1616.

Service: Professor Clifford's service is rated excellent. His service activity has been very significant to the department and to the profession. He has been the coordinator of the Math 115 (calculus I) gateway exam program since Fall 2001, has served on the department executive committee, was coordinator of the faculty research seminar series (2000-2004), and has twice served on mathematics education search committees. Student oriented service includes being faculty advisor to numerous mathematics competition teams and to the mathematics club. He has provided a remarkable research experience for two students. These summer research projects involved work in Professor Clifford's area of composition operators on Hilbert and related spaces, and one of the projects has resulted in a research publication. This last item intersects service, teaching, and research. Further service to the profession includes organizing Project NExT meetings, being a member of the organizing committee for the Michigan Undergraduate Mathematics Conference (MUMC) held at Calvin College in 2001, chairing the organizational committee for the 25th Lower Michigan Mathematics Competition held at UM-Dearborn in 2001, being an elected member of the Michigan Mathematics Prize Competition Exam Writing Committee for 2003-2006, and being lead grader for the Michigan Mathematics Prize Competition in 2004.

External Reviewers:

Reviewer (A)

Referring to Professor Clifford's *Monthly* article the reviewer states: "Because the Singular-Value Decomposition is widely taught and widely applied (e.g. in data compression and analysis as well as in quantum computing), I'm sure it attracted many readers. ... I've always felt that for a faculty member at an institution that emphasizes teaching, a publication such as this, which potentially will improve the teaching of a very important result, should be deemed as credit-worthy as his research publications."

Reviewer (B)

Referring to Professor Clifford's three research papers the reviewer states: "Each of the papers discuss novel aspects of the relation between composition operators and their adjoints, including several problems that have been addressed unsuccessfully by other experts. Of the three papers, I was most impressed by 'Singular values and Schmidt pairs of composition operators on Hardy space.' Clifford addresses problems I've thought about, but he has found the right solutions to the problems, solutions that I and others have been unable to find. What is especially refreshing is that his work shows a freshness of approach that convinces me he will sustain his productivity with attention to problems that are of interest and importance to others doing research in this area."

Reviewer (C)

“The scope of Clifford’s work is impressive and indicates that he will be an important research contributor in a variety of areas. Compared with the work of others at the same stage, I rank Clifford’s research as excellent. The quality and significance of his work are very good. Clifford has proven himself to be a major contributor, both in pure mathematics and in areas that touch upon mathematics education. The prospects for his continued and expanded professional development are excellent.”

Reviewer (D)

“In analysis, the field of composition operators is particularly well-suited for undergraduate research projects, and the Clifford-Dabkowski paper is an excellent example of the high quality work that can result from such a paper. In summary, I think Clifford’s work on composition operators has been a high quality contribution to important problems in the field. I would expect to see further contributions from him of the same caliber.”

Reviewer (E)

“All the papers were well written and appropriate references are given. In the exposition of the papers, I observe a style that tries to make the papers as readable as possible. Clifford’s scholarship is of high quality, although not many papers. It is sure that Clifford has made nice contributions to the field of composition operators and I am completely sure that there will be other researchers in his field who will use his work. Indeed, I already knew two of his papers. Compared with the work of others, I firmly think that the quality is higher than average.”

Reviewer (F)

“You also ask if Clifford shows promise for continuing development. I see this promise in his fourth publication: he asks interesting questions and then develops methods to answer them. These are the basic requirements of a successful research program. I look forward to seeing further work from him.”

Summary of Recommendation:

Professor Clifford has been rated excellent in each of the three areas of teaching, research, and service. He has been successful in the classroom, earning the respect of students through teaching rigorous courses, and has contributed to the curriculum by developing a new course. His service has been important and appropriate to his rank, has had a strong impact on students, and, through his service to the profession locally, has increased the University of Michigan-Dearborn profile in an important way. His research output has not been high but is highly regarded as is evidenced by the research reviews, the journals in which the articles appear, and the lengths of the publications. We are very pleased to recommend, with the strong support of the College of Arts, Sciences, and Letters Executive Committee, John H. Clifford for promotion to associate professor of mathematics and statistics, with tenure.



Kathryn Anderson-Levitt
Dean
College of Arts, Sciences, and Letters



Daniel Little
Chancellor
University of Michigan-Dearborn

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