

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Matthew R. Chapman, associate professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

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| Ph.D. | 1998 | Indiana University |
| B.S. | 1984 | University of Nebraska, Omaha |

Professional Record:

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| 2011 – 2015 | Associate Chair for Undergraduate Studies, Department of Molecular, Cellular, and Developmental Biology, University of Michigan |
| 2009 – present | Associate Professor, Department of Molecular, Cellular, and Developmental Biology, University of Michigan |
| 2003 – 2009 | Assistant Professor, Department of Molecular, Cellular, and Developmental Biology, University of Michigan |
| 1999 – 2003 | Post-doctoral Fellow, Washington University, St. Louis |

Summary of Evaluation:

Teaching – Professor Chapman is a dedicated and skilled instructor who has demonstrated a strong commitment to education in his formal classroom teaching, his mentoring of trainees in the research lab, and in his service as associate chair for Undergraduate Studies. While in rank he has taught Introduction to Biology, Molecular Biology, Microbial Genetics, Teaching Biology, Research Methods in Natural Sciences, and he coordinated a graduate seminar in Microbial Biology. His performance in each of these courses was outstanding. Student evaluations are extremely strong and their comments are very favorable. He is also an exemplary mentor for trainees in his laboratory where he has trained numerous undergraduate students, Master's and Ph.D. students, and post-doctoral fellows.

Research – Professor Chapman studies the formation of amyloids in proteins and is one of the top amyloid researchers in the world. His research has led to important breakthroughs in understanding the formation and function of bacterial biofilms, and his recent work on modulation of amyloid formation and disassembly in mammalian proteins may lead to the development of therapeutics to treat amyloid-related diseases in humans such as Alzheimer's and Parkinson's. The external reviewers recognized that Professor Chapman founded the field of functional amyloids, and they consider his work to be paradigm changing. He is a highly productive researcher, his laboratory is well funded, and his work continues on a strong upward trajectory.

Recent and Significant Publications:

“The bacterial curli system possesses a potent and selective inhibitor of amyloid formation,” with M. L. Evans, et al., *Molecular Cell*, 57, 2015, pp. 445–455.

- “The disulfide bonding system suppresses CsgD-independent cellulose production in *Escherichia coli*,” with D. A. Hufnagel and W. H. DePas, *Journal of Bacteriology*, 196, 2014, pp. 3690–3699.
- “Modulation of curli assembly and pellicle biofilm formation by chemical and protein chaperones,” with E. K. Andersson, et al., *Journal of Biological Chemistry*, 20, 2013, pp. 1245–1254.
- “Gatekeeper residues in the major curlin subunit modulate bacterial amyloid fiber biogenesis,” with X. Wang, et al., *Proceedings of the National Academy of Sciences, USA*, 107, 2010, pp. 163–168.

Service – Professor Chapman’s service and leadership positions are international in scope, which reflects his reputation as a scientific leader in his field. At Michigan, he served four years as associate chair for undergraduate studies. He provided confident leadership in maintaining a strong curriculum and managing the joint Program in Biology. He served on the departmental Executive Committee, and was an active member of the Biological Sciences Planning Committee. Professor Chapman has devoted considerable time to academic professional organizations in his field and journal editorial boards. He also organized and chaired a FASEB meeting on “Molecular Mechanisms and Physiological Consequences of Protein Aggregation.”

External Reviewers:

Reviewer (A)

“Chapman’s scholarly impact has been paradigm changing. More than any other scientist, he has led the way in the discovery and understanding of microbial amyloid. His work has opened a huge field, with practical as well as scientific importance. Dozens of research groups are following up his leads. His discoveries on amyloid rank among the most important of the last 15 years.”

Reviewer (B)

“I can say without reservation that he is one of the most creative and insightful microbiologists and microbial biochemists of his generation. The research from his laboratory is of uniformly high quality and quantity.”

Reviewer (C)

“Matthew Chapman is clearly the world expert on functional amyloid. His work continues to be highly original and of outstanding technical quality. Matthew is widely recognized in the field as a leader, as evidenced by his regular invitations to speak at the major conferences. He gives stimulating talks and is a pleasure to interact with as a colleague.”

Reviewer (D)

“Based primarily on his publication record, I believe that Dr. Chapman has made highly significant contributions in the area of amyloid biology and that he is an important leader in this field. ... This work [DePas et al., 2013 *PNAS*], impressive for its depth and originality, represents a major contribution to the biofilm field, with important implications for achieving a more nuanced understanding of antibiotic resistance.”

Reviewer (E)

“His lab’s discovery, published in *Molecular Cell*[,] of the role of the protein CsgC in inhibiting fibril formation of CsgA is important not only in understanding this normal process in E. Coli but also [to] provide an example that is likely very important in how proteins in mammals can prevent certain proteins such as amyloid- β and synuclein from forming amyloids in Alzheimer’s [sic] disease and Parkinson’s disease. This paper is particularly noteworthy.”

Reviewer (F)

“Matt Chapman has been a major force in shaping the amyloid field by elegantly elucidating functional amyloids using curli biogenesis as a model and defining the role of these fibers during bacterial biofilm formation. ...Chapman is a leading authority and world leader in the field of amyloid biology.”

Reviewer (G)

“I consider Matt to be at the top of the field in extracellular materials produced by bacteria. What he has elucidated has already directly impacted the thinking about protein misfolding diseases and diseases associated with the extracellular matrix, such as fibrosis.”

Reviewer (H)

“He is one of the key thought leaders in this important area that not only is fundamentally interesting, but also is critically important from the perspective of human health, as curli-intercellular amyloidosis is one of the features that make bacterial biofilms so resistant to antimicrobial agents.”

Reviewer (I)

“...I consider Matt to be a remarkably accomplished scientist whose contributions to the area of functional amyloids have really moved the field forward for many years now. Clearly, he is one of the key figures carrying out this important line of investigation and I am certain that he will remain a key contributor for many years to come.”

Summary of Recommendation:

Professor Chapman is a recognized leader at both the national and international level in the field of amyloids. He is a gifted teacher who is well liked by his students, a devoted mentor to his research trainees, and a valued colleague. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Matthew R. Chapman be promoted to the rank of professor of molecular, cellular, and developmental biology, with tenure, College of Literature, Science, and the Arts.



Andrew D. Martin, Dean
Professor of Political Science and Statistics
College of Literature, Science, and the Arts

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