

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

Christine A. Aidala, associate professor of physics, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of physics, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2005	Columbia University
M.Phil.	2005	Columbia University
M.A.	2004	Columbia University
B.S.	1999	Yale University

Professional Record:

2016 – present	Associate Professor, Department of Physics, University of Michigan
2012 – 2016	Assistant Professor, Department of Physics, University of Michigan
2012	Scientist 2, Los Alamos National Laboratory
2009 – 2011	Frederick Reins Distinguished Post-doctoral Fellow, Los Alamos National Laboratory
2006 – 2008	Post-doctoral Research Associate, University of Massachusetts, Amherst, PHENIX

Summary of Evaluation:

Teaching – Professor Aidala is an admired and effective teacher who has taught a variety of courses for undergraduate physics majors and non-majors. She has shown a commitment to excellence and students have responded with a strong indication of satisfaction. As a faculty fellow of the University Musical Society Mellon Institute on Arts-Academic Integration, she brought innovations to Physics 288 (“Physics of Music”), including the inclusion of tours and performances at Hill Auditorium into the study of acoustics. Student evaluations describe these visits and the use of lecture demonstrations as highlights of the course. Professor Aidala describes her teaching philosophy as “Meet students where they are.” Her teaching statement and written feedback from her students make clear that she goes out of her way to create a welcoming and supportive environment for students, regardless of their background and preparation. Outside of the classroom, Professor Aidala has an outstanding record of mentoring trainees at all levels. Since her arrival at Michigan in 2012, she has welcomed 12 graduate students, 26 undergraduate students, and three high school students to do research in her lab. The diversity of her student cohort is especially notable. Professor Aidala makes it a point to tailor her students’ research to their career goals and to help them develop workplace skills ranging from giving presentations to time management. Her contributions to mentoring students from disadvantaged and non-traditional backgrounds were recognized with the University of Michigan’s Imes-Moore award in 2019.

Research – Professor Aidala’s main experimental efforts have been with the PHENIX collaboration at the Relativistic Heavy Ion Collider (RHIC), with the SeaQuest experiment at Fermilab, with planning for a future Electron-Ion Collider (EIC), and more recently with the

LHCb experiment at CERN. On the PHENIX experiment, she concentrated on transverse momentum studies and di-hadron correlations, which related the novel idea of “color entanglement,” where one looks for color interactions amongst partons created in a high energy collision as they move away from each other. On the SeaQuest experiment, she is studying how the production of charm-anticharm bound states (the J/Psi meson) is modified in nuclear targets versus deuterium. On LHCb, her newest experimental effort, Professor Aidala is pursuing an experimental study of how hadrons are formed from quarks and gluons. In addition to her experimental effort, she has started a new theoretical effort on the foundations of physics, which has been a significant post tenure activity. She maintains a well-funded research group and recently received a PECASE award and a Fulbright award.

Recent and Significant Publications:

“Measurement of charged hadron production in Z-tagged jets in proton-proton collisions at $\sqrt{s}=8$ TeV,” with R. Aaij, et al., *Physical Review Letters*, 123, 2019, pp. 232001-11.

“Pion and kaon structure at the Electron-Ion Collider,” with A.C. Aguilar, et al., *European Physical Journal A*, 55, 2019, p. 190. DOI: [10.1140/epja/i2019-12885-0](https://doi.org/10.1140/epja/i2019-12885-0).

“Nonperturbative-transverse-momentum effects and evolution in dihadron and direct photon-hadron angular correlations in p+p collisions at $\sqrt{s} = 200$ GeV,” with A. Adare, et al., *Physical Review D*, 98, 2018, 072004. DOI: <https://doi.org/10.1103>.

“From physical assumptions to classical and quantum Hamiltonian and Lagrangian particle mechanics,” with G. Carcassi, et al., *Journal of Physics Communications*, 2018. DOI: [10.1088/2399-6528/aaba25](https://doi.org/10.1088/2399-6528/aaba25).

Service – Professor Aidala has made significant contributions to standard service assignments within the department, including the Graduate Admissions and the Willie Hobbs Moore Award Selection Committee; she was also elected to the departmental Executive Committee. At the university level, Professor Aidala has been a mentor for the NextProf program and also a member of the ADVANCE advisory board. To the wider community, she also participates at national and international levels fulfilling roles of prominence. She has been a member of the LHCb speakers bureau and co-convenor for an important sPHENIX topical group, and she has served as a representative on the sPHENIX and PHENIX collaboration institutional boards. Recently, she had a very visible role in the National Academies report on the Electron-Ion collider, where she served on the committee that wrote the report recommending its construction. Professor Aidala is currently serving as an institutional board chair for the Electron-Ion Collider User group, which prepares her for future significant leadership opportunities at the collider if and when it is built. She has continued to be selfless in her mentorship of many students and post-doctoral research fellows from under-represented groups. She has served in leadership of the UM Society for Women in Physics (SWIP) and has been an effective and outspoken advocate of greater diversity, equity, and inclusion (DEI) within the Department of Physics. Her commitment to DEI is reflected not only in word but also in action within her own group.

External Reviewers:

Reviewer (A)

“...Christine has an excellent record of research funding, including a very recent PECASE award. ... I’ve seen tremendous growth and...success in Christine’s career...”

Reviewer (B)

“...Prof. Aidala is an internationally recognized leader in high-energy nuclear physics, and I believe she is regarded extremely highly by that community. She functions particularly well at the interface of experiment and theory, a key role.”

Reviewer (C)

“One recent high profile committee she served on was the National Academy’s evaluation of the US Electron Ion Collider. ...Christine was on it as an informed EIC insider, helping discussions on the topic of nucleon spin, one of the three important pillars of science for the EIC.”

Reviewer (D)

“...it is fair to state that Professor Aidala is recognized as a world-wide expert in some of these efforts and that she is widely sought after for this expertise. ... Even if the results [regarding color entanglement] published in 2017-2019, were inconclusive, one has to credit Professor Aidala with her original out-of-the-box thinking to perform these first experimental attempts...”

Reviewer (E)

“Professor Aidala is clearly a leader [in her cohort] in the field of nuclear physics, and a rising star in the US. ...Professor Aidala has amassed an impressive record of scholarship, teaching, and mentoring, and scientific leadership. Her standing is well above that of her peers...”

Reviewer (F)

“Prof. Aidala is a...world-leading, experimental nuclear physicist focused on understanding Quantum Chromodynamics (QCD) at high energies. ...she has made important contributions to our understanding of the fundamental quark and gluon structure of the proton.”

Summary of Recommendation:

Professor Aidala has shown the highest intellectual quality, productivity, and leadership in creating and disseminating knowledge in physics. She is also an excellent teacher and mentor and a recognized leader in her field. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Christine A. Aidala be promoted to the rank of professor of physics, with tenure, College of Literature, Science, and the Arts.



Anne Curzan, Dean
Geneva Smitherman Collegiate Professor of
English Language and Literature, Linguistics,
and Education
Arthur F. Thurnau Professor
College of Literature, Science, and the Arts

May 2020