

PROMOTION RECOMMENDATION
University of Michigan-Flint
College of Arts and Sciences
Department of Computer Science, Engineering and Physics

Christopher A. Pearson, associate professor of physics, with tenure, Department of Computer Science, Engineering and Physics, College of Arts and Sciences, is recommended for promotion to professor of physics, with tenure, Department of Computer Science, Engineering and Physics, College of Arts and Sciences.

Academic Degrees:

Ph.D.	1995	University of Minnesota, Minneapolis, Minnesota
B.A.	1989	Hamline University, St. Paul, Minnesota

Professional Record:

2009 – Present	Chair and Associate Professor of Physics, with tenure, Department of Computer Science, Engineering and Physics, University of Michigan-Flint
2004 – 2009	Associate Professor of Physics, with tenure, Department of Computer Science, Engineering Science and Physics, University of Michigan-Flint
1998 – 2004	Assistant Professor of Physics, Department of Computer Science, Engineering Science and Physics, University of Michigan-Flint
1996 – 1998	Postdoctoral Researcher, Department of Physics, University of California, Davis, California
1996 – 1997	Lecturer, Department of Physics, University of California, Davis, California
1995	Co-Instructor, Department of Physics, University of Minnesota, Minneapolis, Minnesota
1991 – 1995	Research Assistant, Department of Physics, University of Minnesota, Minneapolis, Minnesota
1989 – 1991	Teaching Assistant, Department of Physics, University of Minnesota, Minneapolis, Minnesota

Summary of Evaluation:

Teaching – Professor Pearson is an outstanding teacher at introductory and advanced levels in physics. He has clear learning outcomes, involves students routinely in research projects, is accessible and approachable. Professor Pearson also has spearheaded development of an active learning classroom for introductory physics.

Research – Professor Pearson is an experimental surface scientist. External evaluators praise the quality, extent and impact of Professor Pearson’s research, much of which has been conducted in collaboration with colleagues in Ann Arbor. He has published in top-tier journals in his field. Since his initial promotion in 2004, Professor Pearson has published nine additional articles.

Recent and Significant Publications:

Pearson, Christopher, Bickel, J. E., and Milunchick, J. Mirecki. “Sb Incorporation at GaAs(001)-2x4 Surfaces.” *Surface Science*, Volume 603, 14 (2009).

- Pearson, Christopher, Sears, Lee E., and Millunchick, Joanna Mirecki. "The Coexistence of Surface Reconstruction Domains on Strained Heteroepitaxial Film." *Journal of Vacuum Science and Technology B*, Volume 26, 1948 (2008).
- Pearson, Christopher, Lee, Jennifer Y., and Millunchick, Joanna M. "Arsenic Dependence of the Morphology of Ultrathin GaAs Layers on In_{0.53}Ga_{0.47}As/InP(001)." *Journal of Applied Physics*, Volume 103, 104309 (2008).
- Pearson, Christopher, Bickel, Jessica E., Modine, Normand A., and Millunchick, Joanna Mirecki. "Elastically Induced Coexistence of Surface Reconstructions." *Physical Review B*, Volume 77, 125308 (2008).
- Pearson, Christopher, Riposan, A., and Millunchick, J. Mirecki. "Critical Film Thickness Dependence on As Flux in In_{0.27}Ga_{0.73}As/GaAs(001) Films." *Applied Physics Letters*, Volume 90, 091902 (2007).
- Pearson, Christopher, Riposan, A., and Millunchick, J. Mirecki. "Strain Mediated Reconstructions and Indium Segregation on InGaAs/GaAs(001) Alloy Surface at Intermediate Lattice Mismatch." *Journal of Vacuum Science and Technology A*, Volume 24, 2041 (2006).
- Pearson, Christopher, Dorin, C., Millunchick, J. Mirecki, and Wauchope, C. "Engineering Lateral Composition Modulation in GaAsSb Multilayers." *Journal of Crystal Growth*, Volume 283, 8 (2005).
- Pearson, Christopher, Millunchick, J. Mirecki, Riposan, A., Dall, B. J., and Orr, B. G. "Surface Reconstructions of InGaAs Alloys." *Surface Science*, Volume 550, 1 (2004).
- Pearson, Christopher, Dorin, C., Millunchick, J. Mirecki, and Orr, B. G. "Imaging the Evolution of Lateral Composition Modulation in Strained Alloy Superlattices." *Physical Review Letters*, Volume 92, 056101 (2004).
- Pearson, Christopher, Millunchick, J. Mirecki, Riposan, A., Dall, B. J., and Orr, B. G. "Surface Reconstructions of In-enriched InGaAs Alloys." *Applied Physics Letters*, Volume 83, 1361 (2003).
- Pearson, Christopher, Anderson, G. W., Chiang, S., Hallmark, V. M., and Melior, B. J. "A Low Temperature Scanning Tunneling Microscope Designed for Imaging Molecular Adsorbates." *Materials Science and Engineering B*, Volume 96, 209 (2002).
- Pearson, Christopher, Dorin, C., Millunchick, J. Mirecki, Chen, Y., and Orr, B. G. "Compositionally Modulated Structures Studied by In Situ Scanning Tunneling Microscopy." *Current Issues in Heteroepitaxial Growth-Stress Relaxation and Self Assembly*, Volume 696, 247 (2002).
- Pearson, Christopher, Dorin, C., Millunchick, J. Mirecki, Chen, Y., and Orr, B. G. "Lateral Composition Modulation in Short Period Superlattices: The Role of Growth Mode." *Applied Physics Letters*, Volume 79, 4118 (2001).
- Pearson, Christopher, Krueger, M., and Ganz, E. "Direct Tests of Microscopic Growth Models Using Hot Scanning Tunneling Microscopy Movies." *Physical Review Letters*, Volume 76, 2306 (1996).

Pearson, Christopher, Borovsky, B., Krueger, M., Curtis, R., and Ganz, E. "Si(001) Step Dynamics." *Physical Review Letters*, Volume 74, 2710 (1995).

Pearson, Christopher, Krueger, M., Curtis, R., Borovsky, B., Shi, X., and Ganz, E. "Hot Scanning Tunneling Microscope Study of B Type Step Edges and Small Silicon Islands on Si(001)." *Journal of Vacuum Science and Technology A*, Volume 13, 1506 (1995).

Pearson, Christopher, Curtis, R., Gaard, P., and Ganz, E. "A Compact Micropositioner for Use in Ultrahigh Vacuum." *Review of Scientific Instruments*, Volume 64, 2687 (1993).

Service – Professor Pearson is committed to the College's expectation of being a visible, participating member of the Governing Faculty. He has served as chair of his department – among the largest and most complex in the College – since April 2008, and is now serving on the CAS Executive Committee. Professor Pearson sets a fine example, both for his junior and senior colleagues, of the University's mission of "engaged citizenship."

External Reviewers:

Reviewer (A):

"The invention of the STM about 25 years ago led to a transformative leap forward in this field. Dr. Pearson's important contribution was to integrate the STM with ultra-high-vacuum deposition so that the microscopic process of electronic materials deposition could be studied for the first time *in-situ*. It is no surprise that several of Dr. Pearson's publications in this area have appeared in the most prestigious and highest impact journals in our field, such as *Physical Review Letters* and *Applied Physics Letters*."

Reviewer (B):

"He has been publishing one to two papers per year in highly respected journals and has several publications in the most prestigious and high impact journals in physics (*Physical Review Letters* and *Applied Physics Letters*). This is more than a respectable output considering the teaching load at this institute. His earlier work on step edge growth on surfaces has been highly cited, one [sic] his papers has received over seventy citations and another is close to sixty, which is excellent."

Reviewer (C):

"... Professor Pearson is the driving force of 9 peer reviewed publications since 2004. Among his project, I highlight a very high impact finding in 2004, when Professor Pearson found the evolution of lateral composition modulation in strained alloy superlattice using scanning tunneling microscopy under ultra high vacuum conditions."

Reviewer (D):

"In summary, I would say that Dr. Pearson's scholarly work in the area of experimental physics is of the quality to be expected from a faculty member at any of the leading universities in the US or Canada, and only differs in volume from the track record of someone at a top tier research intensive university."

Reviewer (E):

"I should indicate that I was impressed by the fact that every single publication that I received for Dr. Pearson has been published in a highly reputable journal. Generally speaking, *Physical Review B*, and *Physical Review Letter* are considered the best among all publications in the field of physics and closely related fields in US and around the world."

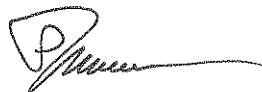
Reviewer (F):

“Dr. Pearson has also published several articles in *Physical Review Letters* which illustrate his ability to look deeply into timely, difficult questions in physics. The articles published in *Physical Review Letters* are the most outstanding work. The criteria for publication in this journal are very difficult to meet and it is recognized as the leading journal for physics in the world.”

Summary of Recommendation:

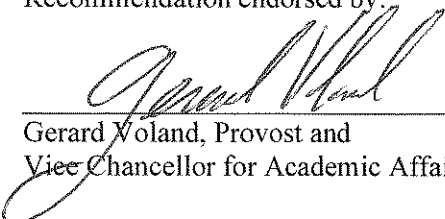
A superb teacher, an able administrator, fine scholar and engaged citizen of the University, Professor Pearson is unanimously recommended for promotion to the rank of professor of physics, with tenure, Department of Computer Science, Engineering and Physics, College of Arts and Sciences.

Recommended by:

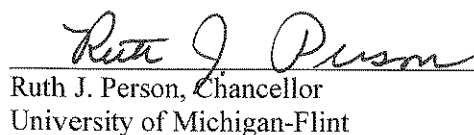


D. J. Trela, Dean
College of Arts and Sciences

Recommendation endorsed by:



Gerard Voland, Provost and
Vice Chancellor for Academic Affairs



Ruth J. Person, Chancellor
University of Michigan-Flint

May 2011