Welcome! I am Meg Pickett, and I am happy to be the new chair of the Physics Department. I have taken the reins after our last chair, Douglas Martin, relocated to England for the year to teach at the London Centre and continue his biophysics research on well-earned sabbatical. We are also happy to be joined for the next three years by visiting assistant professor of physics, Dr. Margaret Koker (below).

As we continue the commitments of our past, we also look to the future with exciting new initiatives, including our part in a large Howard Hughes Medical Institute grant (below). As the first female chair in our history, I am proud of ongoing work to make our curriculum and department more inclusive, opening new possibilities in physics and physics education.

We welcome you again, and hope that all our of the Lawrence Physics family is doing well in this and future academic years.

Best regards,  Meg Pickett

Meg Pickett, Assoc. Professor and Chair of Physics

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Senior Experience Projects

The class of 2018 senior experience projects are:

**Aedan Gardi**
(Dept. Service and Dept. Research award co-winner) **Investigation of the Seebeck Effect in an Undergraduate Laboratory**

**Trong Nam Anh Hoang**
**Dynamics of Obstructed Fluid Flow**

**Theodore Kortenho**
**Designing a Holography Module for the High School Classroom**

**Nicholas Loeffler**
**Automation of the Compton Scattering Experiment**

**John Mangian**
(Dept. Service and Dept. Research award co-winner) **The Impact of a New Speckle Holography Analysis on the Galactic Center Orbits Initiative**

LU physics notes:
- Douglas Martin (Assoc. Prof.) is the Lawrence faculty member at the London Centre for fall 2018 and will stay on in the UK for the remainder of the 2018-19 academic year.
- The Lawrence University Womxn in Physics (LUWiP) student group received a grant from the American Physical Society (see Student Focal Point).

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Other Departmental Awards:
- Brackenridge Prize: Lucas Myers
- S.I.N. Prize: Stephen Deeter
Margaret Koker comes to Appleton most recently from Argonne National Lab (Advanced Photon Source). She has degrees from Boston University (BS), the University of Illinois (MS), and Universität Stuttgart (Doctor rerum naturalium) where she did her doctoral research at the Max Planck Institute for Metals Research. She has also taught and done research at Cornell University (Cornell High Energy Synchrotron Source). Her research interests include science-driven measurement technique development, computational data analysis and modeling, and investigating material deformation mechanics. While she is new to Lawrence, the Fox Cities is not new to Margaret. She grew up in Neenah, Wisconsin just a few miles up the Fox River from Appleton.

The department has experienced an exodus to Pennsylvania this year. After three years at LU, Sara Chamberlin moved on to a tenure-track faculty position at Washington & Jefferson College in Washington, PA south of Pittsburgh; and, after just one year back at their alma mater, Annemarie Exarhos and Christopher Hawley have both taken tenure-track faculty positions at Lafayette College in Easton, PA, near Allentown. We are sad to see them go, but very happy for them as they embark on the next phase of their careers.

The revolving sabbatical door continues to spin in the department. Jeff Collett spent 2017-18 in Madison working with Mark Saffman’s quantum computing group, but is back in the classroom in Appleton this fall, teaching quantum mechanics among other things. Meanwhile Douglas Martin and his family are back in the U.K. for 2018-19. Doug is teaching courses at Lawrence’s London Centre (a course on Victorian Engineering and another on the history of the Royal Society). He will remain in England for the winter and spring on sabbatical at the University of Warwick, and doing research at the Centre for Mechanichemical Cell Biology.

We are very pleased to welcome a new colleague to the Lawrence University Physics Department.

Grant to LU Science Program: HHMI

This year marks the beginning of a new chapter in science education at Lawrence University, with the awarding of a $1 million grant from the Howard Hughes Medical Institute. Directed by Associate Professor of Chemistry, Stefan Debbert, the grant will be administered by all the science departments in Steitz and Youngchild Halls. Lawrence was one of 33 schools in the country selected to implement its Inclusive Excellence Initiative, aimed at creating more inclusive pedagogies and areas for under-represented population in the Science-Technology-Engineering-and Math (STEM) disciplines.

While each department, including physics, has taken separate steps in this direction, the HHMI grant represents a global and fundamentally transformative approach across disciplines. Our plans over the next five years include the hiring of new STEM Pedagogy Fellows and a host of visits by experts. The most exciting and transformative project is the complete redesign of the large lecture hall in Youngchild 121 into a “Science Commons” for our introductory courses. The Commons will create social spaces in which students engage actively and in small groups around tables, rather than traditional, more passive lecture setting. Work on the renovation to Youngchild 121 is tentatively scheduled to start in the summer of the 2019-20 AY.

As Provost and Dean of the Faculty, Catherine Kodat stated, “(HHMI’s) support of our program is a tremendous vote of confidence in the skill, dedication, and passion of our faculty.” Keep an eye out for future updates as we continue to move forward!
Alumna Profile: Claire (Weiss) Brennan ’07

After graduating from Lawrence in 2007, Claire (Weiss) Brennan went on to earn her PhD in Materials Science and Engineering from the University of Connecticut (UConn). During her summers in graduate school, Claire traveled to Maryland to continue her research on complex oxide thin film materials at the Army Research Laboratory (ARL) in Aberdeen Proving Ground, Maryland. She received the SMART (Science, Mathematics, and Research for Transformation) Scholarship in 2009, which provided the opportunity for her to work at ARL after graduating from UConn. Claire worked at ARL from 2012-2014, where her research focused on ceramic materials for armor and energy storage applications. She then moved back to the midwest in late 2014 to pursue a new career path in the Aerospace industry. Claire has been working at UTC Aerospace Systems in Rockford, IL since January 2015, where she works in the Materials and Process Engineering group, performing failure analysis on a variety of aircraft components as well as operations support and design support for various electronic components. In her spare time, Claire loves reading and spending time with her husband, Bobby, daughter, Coraline, and dog, Rosie.

Alumnus Profile: Paul Schonfeld ’05

Paul Schonfeld (’05) is in his sixth year of teaching physics and computer science at Marshall School in Duluth, Minnesota where he also coaches the robotics team. He was a natural sciences interdisciplinary major (physics & geology) at Lawrence. He drew inspiration as an undergraduate from 1) a 2003 NSF REU summer program in Alaska, 2) the physical electronics course (PHYS 220) he took with Professor John Brandenberger, 3) geology courses with Professor Marcia Bjørnerud (that led to a two-year job after graduation making educational videos for W.H. Freeman), and 4) a project he proposed during his ACM study abroad program in Costa Rica called “Studying the Physics of Waves.” Paul continues to study the waves of Lake Superior on surfboard, wearing his wetsuit.

From 2008-2010 Paul worked for i-cubed, LLC, helping develop tools for processing satellite imagery. After a 5-month hiatus in Peru (which involved surfing), Paul return to school at UW-La Crosse, where he earned his Masters of Education and his teaching license. After completing his student teaching at Little Chute High School, Paul landed at Marshall School. He says “I am happy to be at a school that supports a Liberal Arts education …[T]his year I look forward to collaborating with a colleague and students on a class [on] making digital music through programing and electronics.”
The Department of Physics at Lawrence University strives to offer a truly distinctive undergraduate physics program of the highest quality. By featuring specialized signature programs in areas of faculty expertise, we engage students in the practice of physics across the curriculum and develop their ability to use contemporary tools of theoretical, experimental, and computational physics. We aim to attract diverse and eager students, to transform their abilities and aspirations, and to open doors for them to participate as professionals in training and to enter the ranks of the next generation of scientists. In practicing physics, we continually engage in scholarly activities that involve students in collaborative physics research in order to maintain our professional vitality, contribute new knowledge to the discipline, and enrich the curriculum. Ultimately, because physics comprises an important component of the liberal arts, we aim to communicate a coherent scientific world view to all members of the Lawrence community.

Student Focal Point: Lawrence University Womxn in Physics

In the fall of 2017, the women of physics club was reinstated with the support of Professors Exarhos and Hawley. Known as LUWiP, Lawrence University Womxn in Physics promotes diversity, inclusiveness, and community within the department. LUWiP's first project was applying for an APS Women in Physics Grant, which gave us funds to kickstart our group. We hosted speakers from different fields of physics, started a small library of used textbooks and popular science books, and teamed up with other groups to celebrate science through Spring STEM Day. In our second year, we are continuing to connect first years and sophomores with the junior and senior classes through weekly dinners and trips to cheer on Professor Pickett playing roller derby.

LUWiP has been active in organizing field trips (planetarium, above), cheering for Professor Pickett’s roller derby team (above, right), and outreach activities (below, right)

LUWiP Board:
President Sabrina Loehrke
Vice President Willa Dworschack
Treasurer Gretchen Niederriter
Publicity Chair Emma Fletcher
Risk Manager Aly Fritzmann