

AWARDS | SEPTEMBER 01 2022

## 2022 AAPT award citations at the summer meeting in Grand Rapids, Michigan



*Am. J. Phys.* 90, 650–651 (2022)

<https://doi.org/10.1119/5.0109827>



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## 2022 AAPT award citations at the summer meeting in Grand Rapids, Michigan

### Wolfgang Christian—2022 Lillian McDermott Medal



*The Lillian McDermott Medal recognizes those who are passionate and tenacious about improving the teaching and learning of physics and have made intellectually creative contributions in this area.*

Wolfgang Christian is the Lillian McDermott Medal awardee for 2022. Christian, the Brown Professor of Physics Emeritus at Davidson College, is probably best known for his development of the high-quality interactive computer-based resources, Physlets and Open Source Physics (OSP), which are freely available to all teachers and students on the AAPT ComPADRE digital library.

Regarding his receipt of the McDermott Medal, Christian said, “I am honored and humbled to receive the first Lillian McDermott Medal. The work that the Open Source Physics team has done using computation to help students overcome conceptual difficulties rests on the Physics Education Research foundation that Lillian helped build. We all stand on the shoulders of giants and Lillian was indeed a giant.”

Christian received his B.S. and Ph.D. from North Carolina State University. He began his career as an assistant professor teaching at Mercyhurst College, Allegheny College, and Earlham College before moving to Davidson College in 1983 where he was appointed to various positions, including Davidson Physics Computation Center Director, Professor, Physics Department Chair, and Brown Professor of Physics.

In 2006 he was named an APS Fellow, being cited “For his years of dedication and significant contributions to the use of computers in undergraduate physics education, especially for his creation, design, and effective use of interactive curricular materials.” In 2009 the Southeastern Section of APS recognized him with the Pegram Award for Excellence

in the Teaching of Physics. He served as the APS Forum on Education Vice-Chair, Chair-Elect, Chair, and Past-Chair. From 2001 to 2004 he chaired the APS Ad-Hoc committee to establish the APS Excellence in Physics Education Award, and he and Fred Stein raised over \$100,000 to endow that award.

In 2003 AAPT recognized Christian’s service with the Homer L. Dodge Citation. He was a founding member of the North Carolina Section of AAPT in 1996 and served in the Section’s presidential chain from 2009 through 2012. In 2013 he was elected to the AAPT Board of Directors as Secretary. In that role, he served as chair of the Publications Committee and as a member of the Award, Venture Fund, and Governance Structure Committees. He was named a Fellow of the American Association of Physics Teachers in 2014.

Christian has had a huge impact on the physics education community and has helped usher in computational physics in high school, undergraduate, and graduate education around the country and the world. He worked with Harvey Gould and Jan Tobochnik on the third edition of *An Introduction to Computer Simulation Methods* and he developed the OSP code library for that book. He and two of his colleagues who developed Physlets (Mario Belloni and Anne Cox) worked with both the Two-Year College (TYC) Workshop Project and the Advanced Technology Education Physics Workshop Project. This collaboration started in 2001 and is ongoing. In 2011 Open Source Physics and the AAPT-ComPADRE team led by Bruce Mason and Lyle Barbato were awarded the AAAS Science Prize for Online Research in Education (SPORE) for “the development of online tools that bring interactive computer-based modeling to students at many levels.” In 2020 the 18 members of the Open Source Physics collaboration were recognized by the APS with the Excellence in Physics Education Award. The team was cited, “For sustained commitment to computational physics education through creating and disseminating programming environments, books, software, simulations, and other tools to support computational thinking, and for research establishing the value of these tools and best practices for their use.”

Christian’s OSP team collaborated with Gay Stewart and the College Ready in Mathematics and Physics Partnership (CR-MSP) and with Tom O’Kuma and Dwain Desbian on the Two Year College (TYC) project in multi-day workshops providing many hours of training in OSP-developed materials. The weeklong CR-MSP workshops introduced Arkansas in-service teachers to OSP simulations and video analysis tools and the TYC workshops engaged 280 high school and two-year college physics faculty participants (20 per workshop) from many different institutions in different states around the country. Each workshop participant used the OSP materials to develop curricular materials that they would use in their classes. They then presented their developed lesson/

lab/simulation to the rest of the participants for suggestions. All developed lessons/labs/simulations were electronically captured and given to all participants.

*Note: During the Spring 2021 AAPT Board of Directors' (BOD) meeting, the AAPT Board voted unanimously to remove Robert A. Millikan's name from the award that recognizes "those who have made notable and intellectually creative contributions to the teaching of physics." The AAPT then sought nominations from AAPT members for renaming the award. Based upon nominations from members, the BOD unanimously approved giving the award its new name, the Lillian McDermott Medal.*

### **Sean J. Bentley—2022 David Halliday and Robert Resnick Award for Excellence in Undergraduate Physics Teaching**



*The David Halliday and Robert Resnick Award for Excellence in Undergraduate Physics Teaching was established as the Excellence in Undergraduate Teaching Award in 1993. It was renamed and substantially endowed in 2010 by John Wiley and Sons. Named for David Halliday and Robert Resnick, the award recognizes outstanding achievement in teaching undergraduate physics.*

Sean J. Bentley received the 2022 David Halliday and Robert Resnick Award for Excellence in Undergraduate Physics Teaching.

Regarding his selection for this award, Bentley said, "Teaching is my passion, so being recognized by my peers

in an organization that genuinely values teaching is a great honor. The past two years have emphasized the point that effective teaching is a constantly moving target, and this award provides me with encouragement to keep growing and evolving as an educator. If I can be a small part in helping students on their way to becoming successful professionals, that is the ultimate reward this job provides."

Associate Professor at Adelphi University's Department of Physics, Bentley earned his B.S. and M.S. in Electrical Engineering at the University of Missouri-Rolla (now Missouri University of Science and Technology). His Ph.D. in Optics was earned at the University of Rochester.

He spent two years as Director of the Society of Physics Students (SPS) and Sigma Pi Sigma (the physics honor society) and has been a professor for nearly 19 years. In 2013, Bentley was nominated by his students and recognized by the Adelphi University faculty and administration with the Teaching Excellence Award for Tenured Professors. This is no small feat for a physics professor, as typically they teach some of the hardest material on campus. It was additionally impressive considering his reputation among the students as a demanding professor. But what is really amazing is his connection with the students. Students pile out of his office almost daily. He patiently works with all students who want help.

In co-curricular activities his teaching and leadership are outstanding. Adelphi University's Physics Club remains recognized as an Outstanding Physics Club by SPS for over fifteen years largely because of Bentley's work with the students. He teaches them to run events, how to be leaders, and how to find jobs. He is a behind-the-scenes guy who makes things happen and then steps away when the awards are given out.

Bentley's scholarship is also based in the teaching model, as he leads a student-focused, undergraduate research program. He has had an impressive list of students who have done research in his lab over the years. He keeps using every opportunity to enrich each student's life and is a successful mentor.

### **Three new fellows of AAPT were announced in the Summer 2022 meeting:**

Geraldine Cochran, Rutgers University, Piscataway, NJ  
Laura McCullough, University of Wisconsin-Stout, Menomonie, WI  
Arlisa Richardson, Chandler-Gilbert Community College, Gilbert, AZ

*Information on Debbie Andres, the 2022 Doc Brown Futures Awardee; Paula Heron, awarded the Homer L. Dodge Citation for Distinguished Service to AAPT; and Andres R. Torres, the 2022 Paul Zitzewitz K-12 Teaching Awardee, appears in The Physics Teacher.*