

'45

David Mintzer (SB; PhD '49. Thesis advisor: Leo Beranek) is enjoying retirement in Chicago during May through October, and in Palm Desert during the rest of the year. He keeps busy with reading, attending musical events, email and occasional attempts at golf. He would enjoy hearing from his old Tech friends (dmin@northwestern.edu).

'50

Lee Spetner (PhD. Thesis advisors: Robert Williams, Bruno Rossi) During this past year, Lee acquired six additional great-grandchildren, with more expected this year! Also, four of his grandchildren have recently married.

'52

Albert D. Wheelon (PhD) continues to work on volume three of his trilogy on electromagnetic scintillation for Cambridge University Press; it focuses on strong scattering and multiple scattering of EM waves in turbulent media. The first two volumes came out in 2001 and 2003.

'51

Josef Eisinger (PhD. Thesis advisor: Jerrold Zacharias) earned his Ph.D. for an investigation of the structure of the K40 nucleus working in Prof. Zacharias' atomic beam lab in the old Building 20. Josef's long and peripatetic research career took him from nuclear physics to biophysics, and from the late, lamented Bell Labs to the Mt. Sinai School of Medicine. Having retained a strong interest in history, he continues to work on the history of science since reaching emeritus status. Josef's wife, Styra Avins, is a musician and music historian, and they collaborate on research projects in music history, wherein Josef's contribution is deciphering and translating the letters of Johannes Brahms. His recent attempt to dispel the widespread myth that Beethoven was lead-poisoned, demonstrates that a sound background in physics allows you to make contributions in the strangest areas of scholarship! (See classictoday.com/features/WasBeethovenLead-Poisoned2008.pdf.)

'53

Caroline Littlejohn Herzenberg (SB; PhD '58 University of Chicago. Thesis advisor: Uno Ingard) is enjoying a quiet retirement, and trying to keep up (to some extent!) with new developments by attending local physics colloquia and seminars in the Chicago area. In the cultural development department, a new play debuted at Ball State University this spring: "Daughters of Trinity," which is based in part on material from

Caroline's book *Their Day in the Sun: Women of the Manhattan Project* [co-authored with Ruth Howes].

Stephen J. Lukasik (SM; PhD '56. Thesis advisors: Richard Bolt, William Allis) works in the area of national cyber security policy. Recently, he completed an analysis of the possibilities and limits on deterring cyber attacks by state and non-state actors. Last year, Stephen completed two historical papers: the first, on why, when he was the Director of ARPA, he authorized funding the development of the ARPANET. The second paper focused upon the circumstances behind FCC approval of spread spectrum technology, which has since made Wi-Fi and Bluetooth services available.

'57

Ben Woznick (SB; PhD '62. Thesis advisors: Hans Mueller, George Koster) is a member of the Massachusetts Department of Education panel revising the K-12 Science, Technology and Engineering standards. The panel has about 40 members, three-quarters of which consists of teachers/administrators in the public schools, with the remaining members academic and industrial scientists. Last year, the panel considered the ground rules for the revision and this year will be looking at the details. Whenever possible, Ben and his wife love to travel; last year, they visited England and Northern Italy. Ben also enjoys volunteering at the New England Historical Genealogical Society.

'58

Gerald S. Guralnick (SB. PhD '64 Harvard University) was one of six recipients of the American Physical Society's 2010 J.J. Sakurai Prize for Theoretical Particle Physics. The prize was awarded for the "elucidation of the properties of spontaneous symmetry breaking in four-dimensional relativistic gauge theory and of the mechanism for the consistent generation of vector boson masses." He has been a Professor of Physics at Brown University since 1973.

Carl R. Hagen (SB; SM '58; PhD '63) was one of six recipients of the American Physical Society's 2010 J. J. Sakurai Prize for Theoretical Particle Physics. The prize was awarded for the "elucidation of the properties of spontaneous symmetry breaking in four-dimensional relativistic gauge theory and of the mechanism for the consistent generation of vector boson masses." He is a Professor of Physics at the University of Rochester.

'59

William A. Cramer (SB. Thesis advisor: W. Kraushaar) is the Henry Koffler Distinguished Professor in the Department of Biological Sciences at Purdue University. His research is within the area of biophysical studies of the crystal structure and function of proteins in biological membranes. This includes proteins involved in photosynthetic energy transduction; cellular import of bacterial toxins; and a protein implicated in the etiology of Parkinson's Disease.

Peter Gottlieb (PhD. Thesis advisor: Uno Ingard) is working at Northrop Grumman (formerly TRW), continuing the development of software using least squares and Kalman estimation of trajectories of objects in space.

Calvin T. Swift (SB) was a member of "Team SFMR (Stepped Frequency Microwave Radiometer)," which received a Special Award from the American Meteorological Society. The award was given for "sustaining for over 30 years an exceptional, interdisciplinary project, resulting in continuous operational monitoring of hurricane surface winds, improved hurricane intensity advisories, and saving countless lives." Calvin is Professor Emeritus at the University of Massachusetts, Amherst.

'63

Gene D. Sproue (SB; MS '65, PhD '68 Stanford University. Thesis advisor: Lee Grodzins) As Editor in Chief of the American Physical Society, Gene has overseen a new, online APS publication, *Physics*. Available for free at physics.aps.org, its goal is to highlight important research recently published in APS journals (*Physical Review* and *Physical Review Letters*), along with explanations that can be understood by non-experts. Gene is on extended leave from Stony Brook University, where he is a Distinguished Professor of Physics.

'64

Donald C. Shapero (SB; PhD '70. Thesis advisor: Kenneth Johnson) As Senior Director at the National Academy of Sciences, Don manages the Board on Physics and Astronomy, which provides advice to the Federal government on research programs. The Board sponsors the decadal surveys of astronomy and astrophysics and is overseeing the current survey, *Astro2010*, which will set priorities for the field at NASA, NSF and DOE. Other activities include a decadal review of nuclear physics, an assessment of DUSEL science and an outlook for inertial fusion energy.

'65

Phil Siemens (SB. Thesis advisor: Paul Penfield) After earning his Ph.D. from Cornell, Phil spent the Seventies on the faculty of the Niels Bohr Institute in Copenhagen, and in the '80s at Texas A&M, the University of Tennessee and Oak Ridge National Lab. Since retiring, he occasionally finds time to think.

'66

Steve Kukolich (PhD. Thesis advisor: John King) was seriously contemplating retirement, but as he still finds research fun, hopes to continue a few more years. Using microwave spectroscopy, Steve's group measures structures of radicals, organometallic complexes and hydrogen-bonded complexes. Recently, successful targets have been the o-benzyne radical, ethylene-osmium tetracarbonyl and concerted proton tunneling in a carboxylic acid dimer. They've just constructed and operated the largest Flygare-Balle spectrometer in the world (for further details, see chem.arizona.edu/kukolich.) If in the Tucson area, please stop by and say "hello."

'67

Marc D. Levenson (SB. Thesis advisor: Martin Deutsch) The highlight of this past year was receiving the 2010 Frits Zernike Award for Microlithography from the SPIE (the Optical Engineering Society). The award was for the invention and promotion of the phase shifting mask, "one of the most important developments in lithography resolution enhancement of the last twenty years." Such resolution enhancement is now essential to the manufacture of integrated circuits.

'74

William A. Ladd (SB; SM '76; MD Tufts University; MS FACR. Thesis advisor: Lee Grodzins) was privileged to introduce MIT Physics Department Head Ed Bertschinger for his talk on the Large Hadron Collider to the San Diego alumni community in March 2010. Bill also became a member of the Department's Patrons of Physics Fellows (yay!). Bill's company, The Veterinary Imaging Center of San Diego, has begun working with a biotech company that developed a new gene-based, highly effective therapy for malignant brain tumors. They're hoping to prove the efficacy of the treatment for dogs, as they are the only species, other than human beings, which can get glioblastomas. Further, Bill's angel capital investing company, KI Investments, is assisting a startup company, Ridge Diagnostics. The company developed a blood test for

depression that should help in distinguishing depression from other illnesses, and to perhaps predict drug response, thus alleviating the current standard of several weeks of trial therapy.

Ben Svetitsky (SB) is a physics professor at Tel Aviv University, doing research in quantum field theory applied to physics that may appear beyond the Standard Model (he hopes for great things from the LHC). He's using lattice gauge theory, simulated on ever larger computer systems, to study gauge theories that are not quantum chromodynamics. Ben spent the spring and summer of 2010 on sabbatical leave at the University of Colorado, Boulder.

Saku Vrtilek (SB. Thesis advisor: Philip Morrison) was elected a Fellow of the American Association for the Advancement of Science; became a member of the Committee on the Status of Women in Physics of the American Physical Society; was a guest editor of the CSWP newsletter (Spring 2010); and in December 2009 received an award for twenty years of service at the Harvard-Smithsonian Center for Astrophysics.

'76

Jonathan D. Lettvin (SB. Thesis advisor: Rainier Weiss) is using del (∇) operator and 3D radiation patterns to predict and choose profitable buy/sell actions.

Rich Lopiccio (SB. Thesis advisor: Jochen Heisenberg) has been working for Westinghouse in the Pittsburgh area this past year, supporting power uprates for commercial nuclear utilities. His work focuses on developing emergency operating procedures and associated plant parameters. Rich finds it's a bit different from working in the Naval Reactors program (26 years), given the profit aspect of the commercial world. This is a "return engagement" for Rich, as he was on this side of the fence after the fleet years. In his spare time, he's still researching the history of applied nuclear energy from quantum mechanics to the Manhattan Project, to the Rickover Navy and the utility industry.

'77

Michael Herrera (SB. Thesis advisor: Alan Lazarus) continues to teach foreign languages at Franciscan University of Steubenville, Ohio. Although Mike has been teaching German and Spanish for Franciscan since 2004, this year he taught only Spanish, due to an increase in demand for that language. At the same time, Mike still does computational linguistics research in the field of sound change.

'78

Gerald Epstein (SB. Thesis advisor: Erich Ippen) Last October, Gerald joined the American Association for the Advancement of Science as Director of the Center for Science, Technology and Security Policy. The Center works to connect the scientific community and the security policy community, helping them to better understand, work with and support each other.

'79

Mahmoud Shahram (SM. Thesis advisor: Roshi Aggarwall) founded SolarBreeze Technology (*solabt.com*) to provide renewable energy alternative solutions. The company specializes in consulting, design and installation services for solar and/or wind energy systems for commercial, residential and farming applications. Mahmoud's also involved in R&D activities in the areas of software and hardware development for renewable energy systems. In addition, he has developed curricula for applied courses in solar and wind energy alternatives.

'81

Jim Pekar (SB. Thesis advisor: William Bertozzi) Although known to declare he left nuclear physics for biophysics to avoid "big machine/big group" science, this year Jim became the 31st author of a 54-author paper, "Toward discovery science of human brain function," *Proc. Natl. Acad. Sci.* (See *ncbi.nlm.nih.gov/pubmed/20176931*.)

'84

Philip Kaaret (SB; PhD '89 Princeton University. Thesis advisor: Philip Morrison) is a member of a team selected to build the Gravity and Extreme Magnetism Small Explorer (GEMS) mission for NASA. GEMS will use novel photoelectron tracking detectors to measure the polarization of X-rays emitted from black holes, neutron stars, supernova remnants and other astrophysical objects. Philip's group will assist in the design of the instrument, perform the instrument ground calibration and participate in the science planning and data analysis. He is a Professor of Physics and Astronomy at the University of Iowa.

'87

Andrea Ghez (SB) was named to the Lauren B. Leichtman and Arthur E. Levine Chair in Astrophysics in the Department of Physics and Astronomy at UCLA. One of Andrea's recent public lectures on the discovery and study of a supermassive black hole at the center of our Galaxy has been made available at ted.com/talks/andrea_ghez_the_hunt_for_a_supermassive_black_hole.html.

'88

Ernest N. Prabhakar (SB. Thesis advisor: Don Heiman) is enjoying life in Silicon Valley, especially playing iPhone games with his son Rohan, who turned two in April. Ernest still works in Product Marketing at Apple, although occasionally pretends to be an engineer and write Open Source code for the MacRuby project.

'90

Sam Park (PhD. Thesis advisor: Marc Kastner) was selected as Chief Scientist for the Missile Defense Systems Engineering Team (MDSET) in June 2009. MDSET is an industry consortium of aerospace companies (Boeing, Lockheed Martin, Northrop Grumman, Raytheon and General Dynamics) supporting the Missile Defense Agency (MDA). Sam is an employee of Northrop Grumman.

'91

Matt McCluskey (SB. Thesis advisor: Jonathan Wurtele) is a physics professor at Washington State University in Pullman, WA, where his research interests include semiconductor and high-pressure physics. Matt's research group recently pioneered the use of confocal microscopy to measure the volume of a fluid at extreme pressures (100,000 atmospheres and greater). The details behind this novel technique were published in *Applied Optics* **48**, 1758-63 (2009).

'94

Andrew Kirmse (SB) moved to Northern California in 1995 and worked in the video game industry for awhile. He has been at Google for six years, working on and later managing Google Earth and related 3D and image processing projects. Andrew lives in Redwood City, CA, with his wife and two-year old son.

Eric Nehrlich (SB. Thesis advisor: Louis Osborne) is a revenue analyst at Google, using time series analysis techniques to

forecast Google's revenue to help executives plan their future spending. The analyst role leverages Eric's physics training and his software development experience, as well as his interests in business and strategy.

'98

Paul Konigsberg (SB, *Physics and Electrical Engineering & Computer Science*) founded and is a managing partner of Bluebird Asset Management, where he manages a fund investing in mortgage-backed securities. He lives in Arlington, VA.

'99

Sean P. Robinson (SB; PhD '05. Thesis advisors: Edward Farhi, Frank Wilczek) After spending the 2008-09 academic year as the MIT physics department's Academic Administrator, Sean is now back to teaching full-time as a Lecturer here in the Physics Department. He's responsible for making Junior Lab go. Sean also has oversight of students' degree requirements in the Course 8 flexible degree track.

'00

Karlene Rosera Maskaly (SB; PhD '05 *Materials Science & Engineering*. Thesis advisor: Ulrich Becker) accepted a permanent position at Los Alamos National Laboratory in the Computational Physics, Methods and Algorithms Group in July 2009. Her husband, Garry Maskaly (SB '00, PHD '05 *Materials Science & Engineering*), also holds a permanent staff position in a similar group. Karlene thoroughly enjoys her work and plans to stay in Los Alamos for the next several years. She and her husband own a house in Los Alamos and have a three-year-old Golden Retriever named Kaya.

'01

Noah Bray-Ali (SB; PhD '06 University of California, Berkeley. Thesis advisor: Uwe-Jens Wiese) wrote a *Viewpoint* article for the American Institute of Physics website, describing the recent experimental discovery of a new class of superconductors with potential applications for devices that perform quantum information processing. Noah's research in theoretical condensed matter physics was spotlighted by three American Physical Society "virtual" journals. This summer, Noah was a guest scientist at the Max Planck Institute for the study of complex physical systems in Dresden, where he continued his work on applying ideas from quantum informa-

tion theory to solve outstanding problems in condensed matter physics. Noah held a postdoctoral research position at the University of Southern California before his current position as a postdoc at the University of Kentucky.

Aaron Santos (SB) has been promoting math and science to the general public through his blog *diaryofnumbers.blogspot.com* and his book, *How Many Licks? Or, How to Estimate Damn Near Anything*.

'03

Alex Wissner-Gross (SB, *Physics/Electrical Engineering/Mathematics*; PhD '07 *Physics*, Harvard University. Thesis advisor: Bolek Wyslouch) founded a technology company in 2007, Energetics, which continues to grow rapidly, and he was recently named a "Young Innovator" by the National Science Board. Alex now serves on the advisory boards of two greentech companies, as well as a reviewer for several physical science and computer science journals. More information is available at alexwg.org.

'04

Steven Dorsher (formerly Susan Dorsher) (SB. Thesis advisor: Jacqueline Hewitt) was a co-author on "Simulation of underground gravity gradients from stochastic seismic fields," Harms, Jan; DeSalvo, Riccardo; Dorsher, Steven; Mandic, Vuk. *Phys. Rev. D* **80**, 122001 (2009).

'07

Keisuke Goda (PhD. Thesis advisor: Nergis Mavalvala) is currently a postdoctoral fellow in Prof. Bahram Jalali's group at UCLA. He recently published results involving a few innovative techniques in biophotonics [*Appl. Phys. Lett.* **95**, 251101 (2009); *Opt. Lett.* **34**, 2099 (2009); *Phys. Rev. A* **80**, 043821 (2009)]. Following this, he invented a new type of ultrafast continuous real-time imaging [*Nature* **458**, 1145 (2009)].

Christine Corbett Moran (SB, *Physics and Electrical Engineering & Computer Science*. Thesis advisor: Boris Katz) finished her S.M. in Astrophysics in December 2009 at the University of Zürich, and spent early 2010 at the ETH Institute for Astronomy as an observational astronomer working with data taken by the Hubble Space Telescope. Christine is excited to have launched her Ph.D. studies in Astrophysics at the University of Zürich this past April.

'08

Teesa Christian (SB) completed a master's degree in physics from the Ecole Polytechnique Fédérale de Lausanne. Prior to that, she worked on GaAs spin qubits in the Charles Marcus lab at Harvard.

Daniel Mokrauer-Madden (SB) After leaving the Peace Corps (Kenya), Daniel came to Tanzania to work for fellow MIT alum Jodie Wu at a start-up, Global Cycle Solutions. Daniel's the Logistics Officer, developing strategies to help the country's 35 million small-hold farmers climb out of poverty, while laying the groundwork for the company's expansion throughout eastern Africa and beyond. He is now conversational in Kiswahili and has picked up many skills from his life in Africa.