

'51 **Josef Eisinger** (PhD) is currently working on his second book on Albert Einstein, *Einstein at Home*, which is based on the recollections of Einstein's housekeeper in Berlin (1927-1933). The many-sided persona of Einstein continues to fascinate Josef. He notes he was saddened to hear of the passing of Professor of Physics Emeritus John G. King, who, he felt, always added wit and sparkle to their research endeavors in the old Building 20.

'52 **Burton Richter** (SB; PhD '56. Thesis supervisor: Louis Osborne) received the National Medal of Science from President Obama in a White House ceremony on November 20, 2014.

'60 **Jon Claerbout** (SB) recently completed his final textbook, *Geophysical Image Estimation By Example*, which is available free on his web site. Jon notes that the class he teaches from this book is "flipped." This means he does not lecture in a classroom; instead, students view the lecture videos online, free-of-charge. Class periods are then used for questions, discussions and quizzes. Jon finds that since flipping the class, he has gotten to know the students much better, while covering more material.

'61 **Christopher Lange** (SB *Physics & Biology*; D.Phil. '68 *Faculty of Medicine*, University of Oxford. Thesis advisors: Alex Rich, Howard Dintzis) was awarded the Knight's Cross, Order of Merit, by the President of Poland in 2005; has been included in the annual Marquis publication, *Who's Who in the World*, since 2006; presented "First visualization of the cancer stem cell niche for solid tumors and the effects of radiation dose on its architecture," at the annual meeting of the Radiation Research Society in September 2014; and in January 2015 was awarded a U.S. patent on "Methods of Assaying Sensitivity of Cancer Stem Cells to Therapeutic Modalities."

**Karl F. Milde, Jr.** (SB) has finally finished renovating his home, a 1792 Colonial farmhouse in Mahopac, NY. While enjoying his career as a patent and trademark attorney, he has written eight books, including a detective series for children and three adult thrillers. Karl has also been granted dozens of patents for his inventions; his latest invention concerns ways for using smartphones to make guns safer.

'62 **George C. Hartmann** (SB; PhD '67. Thesis supervisors: Jerome Friedman, Henry Kendall) lives in beautiful Chapel Hill, NC, the "Southern part of Heaven," where he's busy working on his "bucket list." George's areas of focus are global travel, cosmology and neuroscience. He finds that the more he learns, the longer his list!

**Newton Kupelian** (SB) notes that even though he's no longer involved in physics research ("It's as hard as it is enjoyable, maybe even more."), he follows the current research, attends talks at MIT, and loves reading *physics@mit*. Nowadays, Newton focuses upon nature photography, which he tries to tie in with science at every opportunity, such as shooting the Milky Way and the color of alpine lakes.

'64 **Verne L. Jacobs** (SB. Thesis advisor: John C. Slater) continues to work full-time at the Naval Research Laboratory in Washington, D. C., where his primary area of research is the quantum theory of electromagnetism, with applications to the optical properties of materials and quantum communication. Verne has also worked on the theory of atomic processes in plasmas.

**Jim Spencer** (SB; PhD in '69. Thesis advisor/supervisor: Harald Enge, Arthur Kerman) continues doing research at the Stanford Linear Accelerator Center, where over the past year he has worked on topics such as radiation damage studies of materials and electronic devices using hadrons, as well as a geometric representation of the inertial masses of the fundamental particles.

'65 **John Tracy** (SB; PhD '70, University of Washington) Following postdoctoral appointments and other adventures, John ended up at Rockwell Science Center for ten years before founding a laser company, Opto Power Corporation, which became a subsidiary of Spectra-Physics. Recently, he has done some start-ups plus owning a decent-sized winery in Sonoma County, CA. John feels that while he was not a great student at MIT, the skills he learned there made everything else seem pretty easy in retrospect, even if, at the time, he didn't appreciate that!

'67 **Steve Berger** (SB; PhD '73. Thesis supervisors: Lee Grodzins, Bernard Feld) recently proposed a deep mathematical connection between the non-commutative matrix algebra of quantum mechanics and the non-Euclidean geometry of gravitational theory (curved space-time) through the relativistic Dirac equation.

He published an article on inertial reference frames and symmetry groups related to this work in *International Journal of Pure and Applied Mathematics* (2009).

**Ed Shalom** (SB. Thesis advisor: Aron Bernstein) recently retired after spending almost 35 years at NASA's JPL. He then turned his attention to acquiring a patent for his invention "Safety Enhanced Design of Rail Type Garage Door Opener with Over the Door Drive Assembly." Ed notes that while this invention is rather simple by the standards of MIT and NASA, it has the potential to protect persons and property during earthquakes or other natural disasters. Further, he has found it rewarding to handle the entire patent process on his own, and encourages other alums to continue the MIT tradition of innovation, even into retirement.

'68 **Owen Franken** (SB. Thesis advisor: Minor White) continues to make a living in Paris as a commercial photographer ([owenfranken.com](http://owenfranken.com)), often featuring food and wine. Recent publications include a *New York Times* story on a Parisian cocktail bar; a feature on dining at home with Parisians for *Smithsonian Magazine*; and a story about the Moueix family, vintners of the renowned Bordeaux wines Châteaux Petrus and Le Fleur Petrus.

**Edward "Joe" Redish** (PhD. Thesis supervisor: Felix Villars) received the 2015 Excellence in Physics Education Award from the American Physical Society for his "leadership in the use of computers in physics education, applying cognitive research to improve student learning and critical thinking skills, tailoring physics instruction for non-physicists, and guiding the field of physics education research through a period of significant growth." Joe continues to be active in discipline-based education research and does not plan on retiring anytime soon. His latest project is designing a new introductory physics course for biology and pre-med students as part of HHMI's National Experiment in Undergraduate Science Education.

**Michael Riordan** (SB; PhD '73) reports that his book on the history of the Superconducting Super Collider, *Tunnel Visions*, was accepted for publication by University of Chicago Press and is scheduled to be released in the fall of 2015.

'69 **Benjamin Rouben** (PhD) continues to keep busy since retirement from Atomic Energy of Canada Ltd. as an adjunct professor in nuclear science and engineering at both McMaster University and the University of Ontario Institute of Technology. He also serves as

Secretary/Treasurer of the University Network of Excellence in Nuclear Engineering, and continues as Executive Director of the Canadian Nuclear Society.

'75 **Francine Wright Bellson** (SM. Thesis advisor: Daniel Kleppner.) was thoroughly impressed by the October 2014 presentation given to Menlo Park, CA, area alumni by physics department head Peter Fisher on "Big Bangs and Little Bumps: The Story of Dark Matter." Francine also enjoyed the opportunity to speak with Prof. Fisher afterward and share some scrapbook photos from her MIT graduation days.

'77 **Alberto C. Sadun** (SB; PhD. Thesis supervisor: Philip Morrison) has been engaged in flux monitoring in the optical of very high energy (TeV) quasars, in collaboration with the VERITAS group of the Smithsonian Astrophysical Observatory. Alberto made remote observations of these sources, which together with the work of others, is offered as optical support to the gamma ray observations made by VERITAS. The group looks for cross correlations (at different wavelengths) of flaring of each of these sources and build spectral models that help them understand the radiation mechanisms and morphologies involved.

'78 **Paul Edelman** (SB) notes that when he chose physics as his major, he wasn't expecting to end up working as a headhunter. However, his firm, Edelman & Associates, continues to be successful, and they've helped many MIT alumni to accelerate their career growth. Anyone interested in working with a hedge fund, electronic trading or software company, should feel free to visit [edeltech.com](http://edeltech.com) for more information.

**Fernando Garcia Golding** (PhD. Thesis supervisor: J. David Litster) has been focused upon developing the core business of his company in electronic security.

'79 **Jeffrey H. Hunt** (SB) was elected a fellow of the Optical Society of America for "novel applications of nonlinear optical science to interfacial industrial diagnostics, development of advanced and frequency-agile laser sources, manufacturing metrology, trans-spectral detection including imaging and communications, and information assurance technologies." He also received the George Morgan Award from the MIT Admissions Office for his efforts in assisting economically disadvantaged students to gain admission to MIT.

**Joseph Kulik** (SB; PhD, University of California, Berkeley. Thesis advisor: Hale Bradt) has been consulting and tutoring in his areas of expertise: materials and condensed matter, nanotechnology, materials characterization (particularly with transmission electron microscopes), electron optics and electron scattering from solids. Prior to this, Joe was the laboratory manager at Penn State's Materials Research Institute.

'81 **Lynn Cominsky** (PhD. Thesis supervisors: Paul Joss, Walter Lewin) received the 2014 Aerospace Awareness Award from the Women in Aerospace organization for her "excellent leadership and sustained dedication to aerospace education and for her tenacious advocacy for girls and young women in aerospace." She also received the 2015 Sonoma State University President's Award for Excellence in Scholarship. Cominsky is a faculty member and Chair of the Department of Physics & Astronomy, and Director, SSU Education and Public Outreach, at Sonoma State University, CA.

'83 **Reinhard Schumacher** (PhD) was elected a Fellow of the American Physical Society in 2014 for his work on hyperon photo- and electro-production, and for baryon resonance physics experiments conducted at Jefferson Lab.

'85 **William J. Bruno** (SM *Physics & Mathematics*. Thesis supervisor: Philip Morrison) After teaching physics at the University of Kansas, Bill returned to work at the New Mexico Consortium in Los Alamos as part of the collaboration with LANL on calcium ion channel modeling. He's also interested in possible mechanisms of reported non-thermal bio-effects and health effects of radio-frequency radiation, which had prompted the WHO's IARC to list cellphone RF as a possible carcinogen.

**Robert Watkins** (SB) After receiving his PhD in physics from the University of Virginia and teaching there for many years, Robert is now writing adventure books for young adults. His first book, *Turn Right at the End of the Word*, will be published in late 2015.

'87 **Rebecca Richards-Kortum** (SM; PhD '90 *Medical Physics, HST*. Thesis supervisor: Michael Feld) was elected to the National Academy of Sciences. She is the Stanley C. Moore Professor of Bioengineering at Rice University.

**Steven Sherwood** (SB) currently serves as the Director of the Climate Change Research Centre at the University of New South Wales in Sydney, Australia, and teaches atmospheric physics. His research focus is on the role of clouds in the climate system.

'91 **Bennett Brown** (SB. Thesis advisor: John King) is the Director of Instruction, Computer Science, for Project Lead The Way, Inc., "the nation's leading provider of K-12 STEM programs." (See *pltw.org*.) A course Bennett wrote for PLTW was published in 2014-2015: *Computer Science and Software Engineering*. He's currently working on another course for Fall 2015 publication that will feature application development with MIT App Inventor.

**Joseph Lehar** (PhD) After five years at Novartis Oncology Translational Medicine, Joseph now heads computational biology for Google Life Sciences.

'94 **Craig Wiegert** (SB. Thesis advisor: Paul Schechter) was appointed an associate professor with tenure in the Department of Physics and Astronomy at the University of Georgia (UGA). He received a Creative Teaching Award for his work in bringing the SCALE-UP pedagogical approach to the UGA campus, and was inducted into the UGA Teaching Academy. Craig also continues to serve as the Department's undergraduate physics coordinator. Last fall, Craig and his husband finished construction on an energy-efficient house, which will be featured in an upcoming modern architecture home tour.

'95 **Vijay Pande** (PhD) It has been a great year for Vijay. His start-up company Globavir, developing pharmaceuticals for infectious diseases dengue fever and the Ebola virus, has been doing very well. He also participates as a venture capitalist at Andreessen Horowitz, working at the intersection of biotech and IT. And recently at Stanford University, Vijay was awarded a chaired position as the Camille and Henry Dreyfus Professor of Chemistry, Structural Biology and Computer Science.

'99 **Eric Ford** (SB. Thesis advisor: Frederic Rasio) was one of eleven Physical Sciences & Engineering National Award Finalists in the 2015 Blavatnik Awards for Young Scientists. Eric, a professor of astronomy and astrophysics at The Pennsylvania State University, was recognized for developing "computational and statistical methods to analyze space telescope data to characterize planets beyond the Solar System."

**Dale Fried** (PhD. Thesis supervisors: Daniel Kleppner, Thomas Greytak) left MIT Lincoln Laboratory after ten years to found a start-up company, *3DEO.biz*, bringing fast and efficient 3D lidar technology out of the research lab and into the commercial world.

**Sean Robinson** (SB; PhD '05. Thesis advisor/supervisor: Edward Farhi, Frank Wilczek) is a lecturer and associate director of MIT Physics' Junior Lab, and welcomes alumni visitors to campus to stop by and say hello.

**'02 Teresa Fazio** (SB. Thesis advisor: Ulrich Becker) left Columbia University in early 2015 to focus full-time on writing. Her publications include columns for the *New York Times* blog "At War." A stint at the Yaddo artists' colony then allowed her to finish a book manuscript on experiences during an Iraq deployment in 2004. However, Teresa discovered that "real life" requires funding, so she returned to Boston this summer to work at Allied Minds, a company that funds and develops start-ups focused upon early-stage technologies initiated at universities and Federal labs. Most of all, Teresa's enjoying being close to MIT again!

**Kendall Mahn** (SB. Thesis advisor: Kate Scholberg) is an assistant professor in the Department of Physics and Astronomy at Michigan State University. She continues to work on the Tokai-to-Kamioka long baseline neutrino experiment, which has recently made the world's best measurements of the atmospheric mixing angle,  $\theta_{23}$ . Kendall is also exploring a novel neutrino scattering experiment concept, "nuPRISM," which can be used to make a pseudo mono-chromatic neutrino beam.

**'03 Alex Wissner-Gross** (SB *Physics/Electrical Engineering/Mathematics*; PhD '07 Harvard University. Thesis advisor: Bolek Wyslouch) was named a Google Solve for X Moonshot Pioneer, and his TED talk on the physics of intelligence has received over 1.7 million views. To learn more, visit [alexwg.org](http://alexwg.org).

**'06 David Chan** (PhD. Thesis supervisor: John Joannopoulos) is a quantitative strategist at BlueMountain Capital Management, where he researches, develops and implements systematic trading strategies across multiple asset classes.

**'07 Peter Bermel** (PhD. Thesis supervisor: John Joannopoulos) received a 2015 NSF Engineering CAREER award for his proposal, "Thermophotonics for Efficient Harvesting of Waste Heat as Electricity." He is an assistant professor of electrical and computer engineering at Purdue University.

**Daniel Burje Chonde** (SB; PhD '15 *Biophysics/Medical Engineering & Medical Physics*, Harvard University. Thesis Advisor: Peter Fisher) was accepted to Harvard Medical School with advanced standing, as a third-year medical student, and will do his clerkship at the Massachusetts General Hospital. Daniel notes that he continues to maintain a giant Afro hairstyle.

**Louis E. Fernandes** (SB; PhD '14 *Biophysics*, Stanford University. Thesis advisor: David Cory) received his PhD in biophysics from Stanford University in September 2014. For his graduate research, he studied DNA structural transitions, advised by Prof. Zev Bryant.

**Christine Corbett Moran** (SB *Physics & Electrical Engineering*; PhD '14 *Astrophysics*, University of Zurich) received her PhD in theoretical astrophysics from the University of Zurich in fall 2014, under the supervision of Professors George Lake and Romain Teyssier. After an internship doing computational physics at SpaceX, in Spring 2015 Christine began a three-year NSF Astronomy and Astrophysics Postdoctoral Fellowship at Caltech in the Theoretical Astrophysics Including Relativity (TAPIR) group.

**Michael Shaw** (SB; PhD '13 *Physics*, Stanford University) Despite completing his PhD in physics at Stanford University two years ago, Michael still hasn't left Silicon Valley. He's now a data scientist at Facebook and looks forward to connecting with any alumni considering a similar path.

**Madeleine B. Sheldon-Dante** (SB. Thesis advisor: Paul Schechter) recently married MIT EECS alum Jim Paris. They currently live in Boston with their dog, Ozone.

**'08 J. Colin Hill** (SB *Physics & Mathematics*; PhD '14 *Astrophysics*, Princeton University. Thesis advisors: Claude Canizares, Kenneth Rines) After completing his PhD, Colin began a postdoctoral position at Columbia University in fall 2014, as a Junior Fellow in the Simons Society of Fellows. His focus is in cosmology, specifically the cosmic microwave background radiation and large-scale structure of the universe. Colin collaborated with colleagues at Princeton to understand the role of polarized dust contamination in the claimed detection of primordial gravitational waves by the BICEP2 collaboration. Their results indicated that dust alone could explain the measured signal, and this finding was subsequently validated by an official joint analysis from the BICEP2 and Planck collaborations, in February 2015. Colin's now working with the Atacama

Cosmology Telescope team to improve the understanding of these contaminants and extract the primordial signal from the microwave sky.

**Peter Monaghan** (PhD. Thesis supervisor: William Bertozzi) accepted a position as an assistant professor at Christopher Newport University, in Newport News, VA, while continuing his research program at Jefferson Laboratory.

**'09 Tyler Abrams** (SB; PhD '14 Princeton University) successfully defended his PhD thesis in plasma physics at Princeton University in November 2014. He then moved to San Diego, CA, for a post-doctoral position at the General Atomics/DIII-D fusion research facility. There, his research is focused upon experimental studies of high-temperature plasma-materials interactions.

**Daniel Hochbaum** (SB; PhD '14, Harvard University) received his PhD from Harvard University in November 2014, and in July 2015 began a postdoctoral position as a Junior Fellow with the Society of Fellows at the same university.

**Bhaskar "Buro" Mookerji** (SB) is a software engineering lead at Swift Navigation, a small Bay Area start-up, which manufactures high-precision GPS receivers for robotics and machine automation. When he's not occupied doing way more

linear algebra than he'd ever thought he would be doing, he engages in a variety of controversial activities and lives in an MIT house/commune.

**Charles Sebens** (SB *Physics & Philosophy*) studied the philosophical foundations of quantum physics at the University of Michigan, where he recently completed his PhD. After a postdoctoral position at Caltech, he'll join the philosophy department at the University of California, San Diego, as an assistant professor.

**'14 Anna Ho** (SB) spent the past academic year on a Fulbright research grant at the Max Planck Institute for Astronomy in Heidelberg, Germany. Her project focused upon developing a new method, borrowed from machine learning, for cross-calibrating vast datasets of stellar spectra. Beyond her research activities, Anna spent much of her time traveling throughout Germany and learning the language. These experiences ranged from visiting local high schools to exchange perspectives on contemporary American political issues, to staying with a friend's family in a small village in East Germany and participating in their traditional Easter celebrations.