

## Sixth Class of 1966 Locomotive Award

I need to say that these words were written by John Hart and approved by Joel. John said most of this at our '66 San Francisco lunch in April, which Joel was unable to attend.

The sixth Class of 1966 Locomotive Award goes to our Class Valedictorian, **Joel Primack**. Joel is a distinguished physicist who has excelled as a researcher and teacher. His scientific interests range from theoretical particle physics to cosmology. In particular, Joel is well known for co-authorship of the theory of cold dark matter, which makes up most of the mass of the universe. As a Distinguished Professor Emeritus at UC Santa Cruz, Joel is still pursuing the nature of dark matter and dark energy, which is one of the great unsolved mysteries of the universe.

Joel has also worked energetically and effectively in the public policy arena, pursuing topics such as nuclear arms control and organizing the science community to speak to societal issues. For example, in 1973 he started the Congressional Science and Technology Fellowship program, through which 2,000 PhD scientists have now served for a year on the staffs of Representatives, Senators, or Congressional committees, supported by their professional societies. Joel later started the Program on Science and Human Rights of the American Association for the Advancement of Science.

With his wife, Nancy Abrams, Joel has also been a great popularizer of science, explaining the universe to the rest of us. If you missed their lecture at our 40<sup>th</sup> reunion, or even if you didn't, don't miss their two books, *The View from the Center of the Universe* and *The New Universe and the Human Future*.

Joel's passion and ability were apparent as early as September, 1962, in the freshman advanced physics course taught by legendary professor John Wheeler. Four years of academic distinction followed, and his senior thesis corrected the Bohr-Wheeler "liquid drop model" of nuclear fission. By graduation, Joel was inducted into Sigma Xi, The Scientific Research Honor Society, where he now serves as national president. His valedictory address, delivered to an audience that included honorary degree recipient J. Robert Oppenheimer, warned of the misuse of technical and scientific knowledge. The New York Times quoted Dr. Oppenheimer as saying that he was very encouraged that the new generation had abandoned the implicit faith in progress of 40 years ago.

In grad school, Joel and fellow physicist and valedictorian Bob Jaffe '68 organized the Stanford Workshops on Political and Social Issues (SWOPSI), courses in which

students earned academic credit for research intended to improve the world. Our classmate **Ned Groth** led a SWOPSI workshop on Bay Area air pollution, and SWOPSI lasted for 20 years. In 1974 Joel and fellow physicist Frank von Hippel, who later taught for decades at Princeton in the Wilson School, published *Advice and Dissent: Scientists in the Political Arena*, a guide for scientists seeking to be part of the policy-making process.

Joel has received too many awards to mention, but especially noteworthy is the 2016 Leo Szilard Lectureship Award for outstanding accomplishments in promoting the use of physics for the benefit of society in areas such as the environment, arms control, and science policy.

In addition to their many achievements, Joel and Nancy also have a daughter, Samara '02, and a four year old grandson Wilder. Samara has become a leading dialect coach for movies and TV and a communication coach for scientists, executives, and politicians. Her presentation on "How To Use Your Voice to Get What You Want" was the most popular talk at the October 2018 *She Roars* event celebrating women at Princeton.

Finally, one anecdote. Then-Supreme Court Justice Anthony Kennedy was the guest of honor at an event for the judges of the 9<sup>th</sup> Circuit. He gave a brief talk, and during Q&A someone asked whether he thought a person had to be a lawyer to be a Supreme Court Justice. Kennedy said "no," anyone with a broad and critical intelligence and sound insights into how things work could be a Justice. The questioner then asked, "Can you name a non-lawyer who might make a good SCOTUS nominee?" Kennedy replied, "Well, how about Joel Primack?" Samara heard about this from her friend Joe Kochan, who was Princeton student body president their senior year, and Samara then told her parents. Nancy contacted Justice Kennedy to ask, "What made you say that?" He replied that he'd read *View from the Center of the Universe* and was a big fan. An invitation to visit him at the Supreme Court followed.

Staś, can you bring us home with the thing you do best?