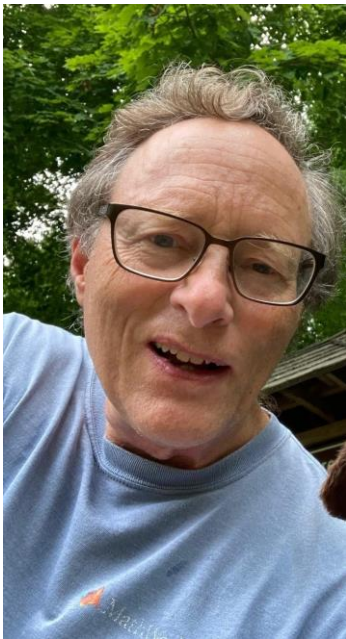




RETIRED MEN'S ASSOCIATION OF GREENWICH, Inc. (RMA)
Invites you to its meeting **August 9, 2023** at 11:00 am.
First Presbyterian Church, 37 Lafayette Place, Greenwich, CT
The program will also be shown on Webinar: <https://bit.ly/30IBj21>

Tim Brunner

“Extreme Ultraviolet Lithography: Making the Next Generation of Computer Chips”



Ever wonder how so much processing power can be contained in such a small device as a modern-day smartphone, tablet, or ultra-thin laptop? Essential to this ongoing progress is continued miniaturization of computer chip circuitry. Computer circuits are fabricated from silicon wafers by a complex process involving hundreds of steps, but the most critical steps are the printing of microscopic circuit patterns onto wafers. The printing process, which uses light rays to project the pattern onto a wafer, is called lithography. To keep making chips faster, more powerful, and less expensive, these patterns must get finer and finer, and the key to projecting finer patterns is to use shorter wavelength light. In the 1980s, lithography used blue light because its wavelength is shorter than green or red. In the 2000s, ultraviolet light was used. The most advanced chips today must be printed with “extreme” ultraviolet light (EUV).

While it is easy to build a source of blue light, or even ultraviolet light, generating EUV is very challenging. EUV is not only difficult to produce, it is also strongly absorbed by air, as well as the glass used in a lens to focus the rays. In addition, multiple super fine patterns must be printed on top of one another during the course of wafer processing, and the patterns must be overlaid with phenomenal precision, or the chip will not work.

How can a machine produce EUV and guide it to form submicroscopic patterns precisely overlaid on previously printed layers on a silicon wafer, at a speed of thousands of chips per minute? The technology described in this presentation will sound like science fiction, but EUV lithography is the driving force in high volume chip manufacturing today.

Dr. Timothy A. Brunner is an acknowledged expert in this field, with more than 40 years experience and numerous publications and awards.

Our speaker on August 16 is Susan Herbst, author of “A Troubled Birth: The 1930s and American Public Opinion,” on “How Public Sentiment Is Formed.”

*The Greenwich Retired Men’s Association offers a free program every Wednesday that is open to the public, both men and women; no reservations are required. Our social break starts at **10:40 AM** followed promptly by our presentation at **11:00 AM**. Programs are at the First Presbyterian Church, 37 Lafayette Place in Greenwich. For additional information see www.greenwichrma.org or contact info@greenwichrma.org.*