

PROCEEDINGS OF SPIE

***Tribute to Warren Smith:  
A Legacy in Lens Design  
and Optical Engineering***

**Robert E. Fischer**  
*Chair/Editor*

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# Preface

## To Warren Smith

It is said that you can't tell a book by its cover, but you can tell something about what the book has been through, and a collection of books usually includes some that are pristine and others that are worn out, stained, torn, dog-eared, coffee colored, and otherwise bestowed with crime-scene-like evidence. These beat up books have been the most used.

Of my books, the one with its cover most worn and needy of opto-biblio-mechanical help is Warren Smith's *Modern Optical Engineering*. I purchased this book in graduate school about 30 years ago and have since opened it many times. This book has a number of virtues. Its content indicates that the author has done what he writes about. The book's style is straightforward and requires no pulling over to the side of the road to interpret ambiguous prose. Strunk and White would be pleased.

Except, of course, for the shabby jacket, Warren Smith is like his book. He is direct, not reluctant to point out errors, but not looking for them. I have felt at times that his presence at talks—typically near the front of the room—makes people a bit more careful about what they say, kind of like a sheriff overseeing a saloon full of lens designers. I have always thought of Warren as a sort of John Wayne of optics.

Warren has truly had an important and beneficial effect in the applied optics community, through his book, articles and papers, and by teaching optical design about a jillion times. The energy that Warren has so expended is impressive.

I recently saw Warren in a full page advertisement. It gave me an idea for a commercial:

SET: Saloon crowded with lens designers using laptops on the bar and on the tables.

VOICE OVER:

Nobody knows for sure where he comes from. They say it might be some place way up North, named Oslo or something, just like them blond strappin' boys up in North Dakotie. ...

There is a distant sound of boots on a wooden walkway. The sound grows and the bar room doors swing open. It is Warren Smith with a six shooter in one hand and a laptop in the other.

WARREN SMITH

"Barkeep," he commands, "Gimme a heads up display and an eyepiece chaser."

As he enters, the occupants of the saloon rearrange themselves, as if controlled by a giant, invisible slider. Some of the timid designers head for the back door. The savvy bar girls reposition themselves, leaving high and dry some figures known to cavort with other software.

the DUKE

"Deal 'em," says the Duke....

But I go on . . .

Thank you, Warren.

**Douglas S. Goodman**

# **A Tribute to Warren J. Smith**

## **“A Living Legend in Optical Design and Engineering”**

**Organized by Warren’s many friends and colleagues**

**Thanks to SPIE for their gracious support**

**Also**

**OPTICS 1, Inc.**

**Kaiser Electro-Optics/A Rockwell Collins Company**

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This conference is dedicated to Warren J. Smith, one of the true living legends of the optical design and engineering field. Warren’s presence has probably touched more optical scientists and engineers than anyone else, ever! His book *Modern Optical Engineering* first published by McGraw-Hill in 1966 is now in its 3<sup>rd</sup> edition. The book has been so popular over the years that Warren lectured to many local Sections of the OSA on the topic “MOE and Me,” with MOE being his book *Modern Optical Engineering*.

Warren’s career spans 60 years, beginning in 1944 when he was a physicist and shift supervisor at the Clinton Engineering Works of the Tennessee Eastman Corp., Oak Ridge, Tennessee. Warren moved to Chicago in 1946 to become an optical engineer, later moving on to the position of Chief Optical Engineer at Simpson Optical Manufacturing Company. In 1959 he moved west to Raytheon in Santa Barbara where he was Manager of the Optics Section until 1962. From 1962 until 1983 he was Director of R&D at Infrared Industries in Santa Barbra, and Vice President of R&D at Santa Barbara Applied Optics until 1987. Since then Warren joined Kaiser Electro-Optics in Carlsbad, California, where he is Chief Scientist, consultant.

Through his short courses and books, Warren Smith has influenced more optical designers and more designs than anyone else on the face of the earth!

On the lighter side, Warren truly looked like Clark Kent a.k.a. Superman. The photo of Warren on the inside flap of the first edition of *Modern Optical Engineering* showed the young Warren Smith to bear an uncanny resemblance to Clark Kent. The resemblance

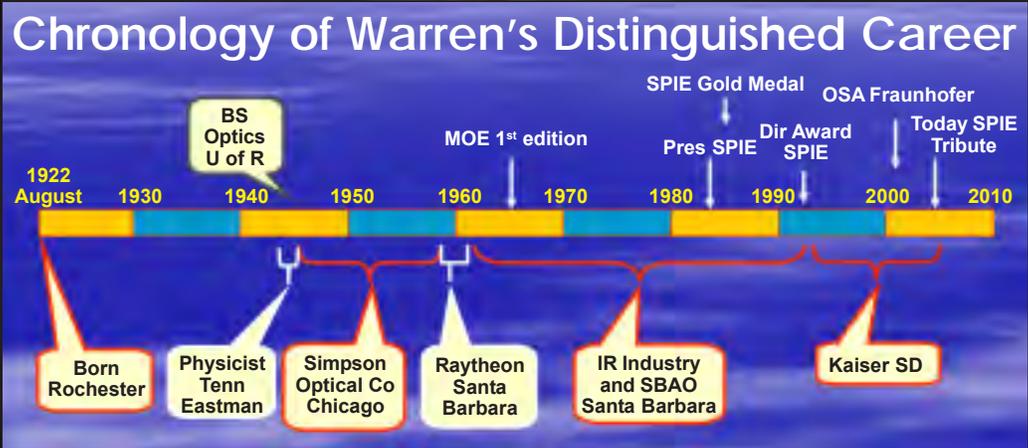
was so clear that several of Duncan Moore's students made Warren a Superman outfit which he wore to the Lens Design Technical Group session at the 1979 annual meeting of the Optical Society of America. It caused quite a stir, especially to an elderly lady waiting for an elevator who, after seeing Superman in the elevator, said quickly "I think I will wait for the next car."

A very special "paper" by Lois Lens and Perry Whitelight of the Daily Pupil, Inc. is titled "Superman V: Warren Smith's identity finally revealed." Thanks very much to Carmiña Londoño and Duncan Moore for a great presentation!

In this conference we will review Warren's many accomplishments, hear from many of his friends, and most importantly celebrate the many accomplishments of one of the true giants in optical design and engineering.

*Participation in this conference consisted of 20 papers all of which were invited. The thrust of the papers and the proceedings were topics in optical design and engineering that represent the state-of-the-art. Several papers discussed Warren, his career, and other anecdotal material relating to our dear friend and colleague, Warren J. Smith.*

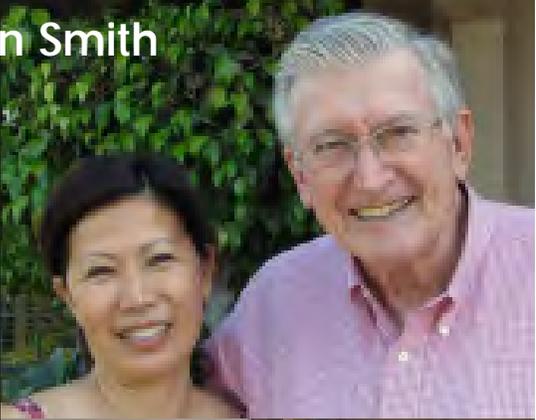
**Robert E. Fischer**



# The Real Warren Smith

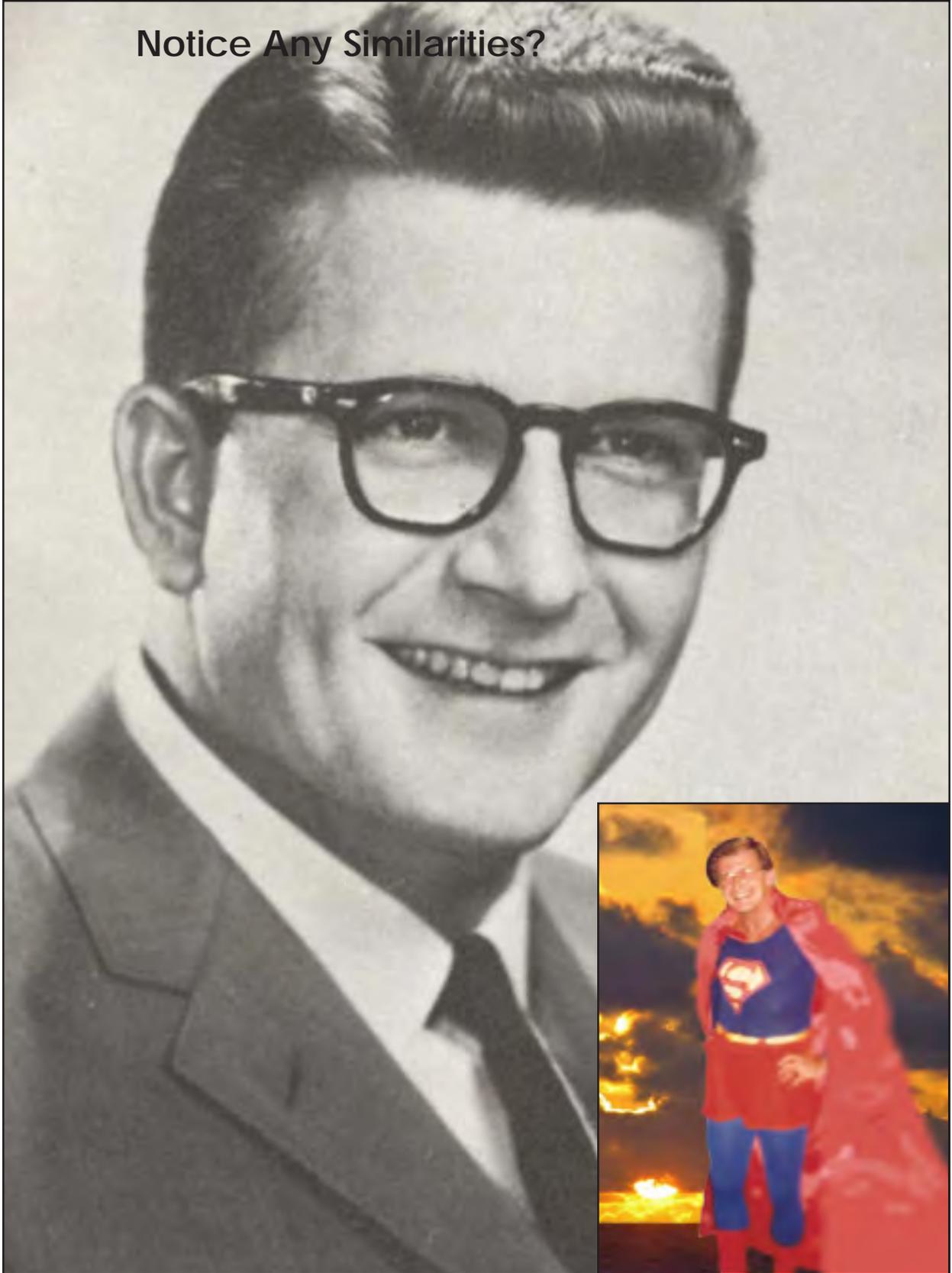


"Classic" Warren



Warren with Another Master in Lens Design... Rudolf Kingslake

Notice Any Similarities?



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