

First FPE PhD Wants Fire Safety Pro

VYTO BABRAUSKAS, PhD, wants to raise a fuss. “They say that’s the way to start,” he says. “You’ve got to raise a fuss to get things happening. So that’s what I’m going to do.” Specifically, Babrauskas wants to draw attention to the importance of learning from mistakes.

“Analyzing failure is crucial. Fire is a failure. The profession is not totally appreciative of that,” he says. “We should be doing the same as mechanical engineers: When they write boiler code, they exhaustively study what causes boilers to explode. Then and only then, do they write the code. We aren’t doing that.”

“In 1950, fire protection engineering was basically nonexistent,” he notes. “Essentially, all we did was read the code book and apply it. By the 1970s, things had escalated by leaps and bounds and it became a bona fide technical profession. But we’re still missing that crucial component of learning from our mistakes. Every non-arson fire is a mistake. We need to learn from them to improve the technical posture of our industry.”

Babrauskas is the president of Fire Science and Technology Inc., a firm specializing in fire science, contract research and development, and fire litigation support. A typical day finds him focused on forensic work and trying to learn what went wrong.

“It is somewhat unusual work for an FPE,” he says. “Forensics is so specialized that, in general, FPEs are either completely devoted to it or they’ve never heard of it. There are very few exceptions.”

His specialty came through years of research and education in a variety of fields. He earned a BS in physics from Swarthmore College in 1968 and an MS in structural engineering from the University of California, Berkeley in 1972. In 1976,



he earned his PhD in fire protection from Berkeley — the first time such a degree had been awarded.

Babrauskas says one of the proudest moments in his professional life was the publishing of his “Ignition Handbook” in 2003. This 1,116-page handbook, the first ever on this topic, was intended as a resource to serve fire safety engineers, fire investigators, forensic scientists, insurance company personnel, chemical engineers, and other professionals concerned with fire and explosion safety.

He says it’s also the largest handbook on fire safety science written by a single person. But he wasn’t ready to stop there.

“As soon as I finished *Ignition Handbook*, people asked if I was going to start on a second edition,” he says. “Now, ignition is not a field that is evolving quickly, so the need for a revised edition is not very pressing. However, what struck me as I was working on it was that the approximately 100 pages on electrical fires could easily become 1,000 pages — and it is something we as an industry need.”

The new book, which he is close to finishing, will focus on electrical fires and explosions from electrical causes. He thinks it will be even bigger than “Ignition Handbook.”

“When it comes to electrical fire research, we’ve had to rely mostly on overseas research,” he says. “I got interested in that over the course of working on *Ignition Handbook*, and I made a sizable effort in there to explain electrical fires. Before that, there was no treatise to help people learn about electrical fires, but that was just one of hundreds of topics the handbook had to cover. So I knew it needed a more focused approach.”

Overall, Babrauskas says the study of electrical fires is improving in the United States, but there are still major gaps. One of the biggest challenges is research funding. He says many countries around the world have gotten past this because their governments make fire safety a priority.

“Japan, for example, is leading the way in large part because of the work of the National Institute of Police Science. In the US, they would probably be making

Professionals to Learn from Mistakes

Mace and batons. In Japan, they created a specialty in electrical fire safety. The Tokyo Fire Department has its own massive research laboratory.”

This goes back to the fuss Babrauskas wants to make about pushing fire science to grow and expand. Extremely few universities have any faculty specialized in forensics, never mind talking about subcategories like electrical fires, he says. “If they aren’t doing big-picture work, what are the chances they are drilling down?”

He says groups like SFPE offer im-

Every non-arson fire is a mistake. We need to learn from them to improve the technical posture of our industry.

portant instruction and training at their conferences and through various publications, but he would like to see even more avenues for fire investigators to get an advanced technical education.

“The forensic experience is one of the best ways to make real progress in fire

safety engineering and science,” he says. “We have to take the time to learn from our mistakes. When we, as an industry, are able to put an emphasis on that, we will see tremendous growth. It is happening, but it needs to happen more. So I guess I need to go make a fuss.” 

DEPARTMENTS

From the SFPE President 4

Increasing Competency and Recognition Globally

Brian J. Meacham, PhD, PE, CEng, FIFireE, FSFPE

From the Technical Editor 6

Fire Protection Engineering: 20 Years and Counting

Chris Jelenewicz, PE, FSFPE

Viewpoint 8

Fire Protection Engineers and Forensic Fire Investigations

Steven Carman, MSFPE

Flash Points 12

Fire Protection Research Foundation Holds Workshop to Develop Training on Flammable Refrigerants for Firefighters

Member Profile 14

First FPE PhD Wants Fire Safety Professionals to Learn from Mistakes

Events and Resources 42

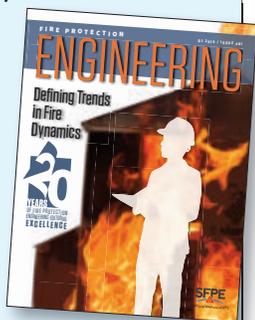
Reprints, E-Prints, Permissions, and Licensing Contact Brett Petillo at bpetillo@wrightsmedia.com or (877) 652-5295.

Go to magazine.sfpe.org

■ To access online versions of all articles

■ To access archives of *Emerging Trends* newsletter (now *FPE Extra*)

■ For information on article submission to *Fire Protection Engineering*



EDITORIAL ADVISORY BOARD

Carl F. Baldassarra, PE, FSFPE
Wiss, Janney, Elstner Associates, Inc.

Don Bathurst, FSFPE

Luca Fiorentini
Tecso

Russell P. Fleming, PE, FSFPE
International Fire Sprinkler Association

Gavin Horn, PhD
Illinois Fire Service Institute

William E. Koffel, PE, FSFPE
Koffel Associates, Inc.

R. Thomas Long Jr., PE
Exponent

Maria B. Marks, CFPS, SET
Siemens, Building Technologies Division

Kurt Ruchala PE, FSFPE
JENSEN HUGHES

Warren G. Stocker Jr., FSFPE
Albertsons Companies

MAGAZINE PERSONNEL

TECHNICAL EDITOR
Chris Jelenewicz, PE, FSFPE

MANAGING EDITOR
Carla Kalogeridis

ART DIRECTION AND DESIGN
BonoTom Studio, Inc.
www.bonotom.com

ADVERTISING
Brian Marks
SFPE Media and Event Sales
brian.marks@mci-group.com
410.316.9855

Fire Protection Engineering (ISSN 1524-900X) is published quarterly by the Society of Fire Protection Engineers (SFPE), 9711 Washingtonian Blvd, Suite 380, Gaithersburg, MD 20878, phone: 301.718.2910. Copyright ©2019. The mission of Fire Protection Engineering is to advance the practice of fire protection engineering and to raise its visibility by providing information to fire protection engineers and allied professionals. The opinions stated are those of the individual authors and do not necessarily reflect those of SFPE.

SFPE CORPORATE 100 PARTNER PROGRAM

The SFPE Corporate 100 Partner Program was founded in 1976 to strengthen the relationship between industry and the fire protection engineering community. Membership in the Corporate 100 Partner Program recognizes those who support the objectives of SFPE and have a genuine concern for the safety of life and property from fire.

VISIONARIES

AGF Manufacturing, Inc.
AIG
FM Global

HEX, Inc.
JENSEN HUGHES
Johnson Controls

Koffel Associates, Inc.
Siemens Building Technologies, Inc.

BENEFACTORS

Arup Fire
Coffman Engineers
Globe Fire Sprinkler Corporation

Harrington Group, Inc.
Honeywell Fire Safety
Poole Fire Protection

Telgian Corporation
Underwriters Laboratories
Victaulic

PATRONS

Automatic Fire Alarm Association (AFAA)
Code Consultants, Inc.
James W. Nolan, Emeritus
National Fire Protection Association (NFPA)

National Fire Sprinkler Association (NFSA)
NV5
Swiss Re
The Protectowire Co., Inc.

The Reliable Automatic Sprinkler Company
Wiss, Janney, Elstner Associates, Inc. (WJE)
XL Catlin Property Risk Engineering / GAPS

SUSTAINERS

ACCÉNT Fire Engineering International, Ltd.
Anvil International
DITEK Corporation
FireLink, LLC
Fire Safety & Engineering SA
Fisher Engineering, Inc.
Foster Engineering & Consulting, LLC
Futrell Fire Consult and Design, Inc.
Hose Monster Company

HSB Professional Loss Control
Keltron Corporation
LeGrand Engineering, Inc.
Liberty Mutual Property
Micropack Detection, Inc.
Phoenix Fire Systems
Robert M. Gagnon, PE, SET, FSFPE
Rollinger Engineering, Inc.
Sabalcore Computing
Seneca Fire Engineering, LLC

Slicer & Associates
Stat-X Aerosol Fire Suppression (mfr. by Fireaway Inc.)
TERPconsulting
The University of Maryland Online Master's Degree Program
Thunderhead Engineering
US Smoke & Fire
Viking Group, Inc.
Worcester Polytechnic Institute