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Fire Science

Eric Dunn

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Fire Science Technology

In the late 1960s, President Richard M. Nixon authorized the formation of The Commission on Fire Prevention and Control. The 90th Congress then passed the “Fire Research and Safety Act” and authorized funding to conduct the study. It was the first in-depth look at the fire problem ever undertaken by the Federal Government. That commission was comprised of 20 representatives, including professors, fire chiefs, insurance executives, state fire marshals, consultants, an Underwriters Laboratories representative, a medical burn specialist, state fire training representative, Fire Equipment Association representatives, International Association of Fire Fighters representatives, National Fire Protection Association representatives, the Secretary of Commerce, and the Secretary of Housing and Urban Development. The commission was chaired by Richard E. Bland, Associate Professor, Pennsylvania State University, and vice-chaired by W. Howard McClennan, President, International Association of Fire Fighters.

On May 4, 1973, Chairman Bland issued the Commission’s report to the President. The title of the report was “America Burning.” The report identified the national fire problem and offered recommendations to address areas of concern. The report was very comprehensive and addressed the cost of fire in the United States in terms of loss of life, injuries, and loss to property. It identified for the first time that fire was a major national problem.

Building design, materials and construction techniques, codes and standards, built-in detection and suppression equipment were all reviewed and recommendations were proposed.

Fire safety in the home was recognized as an integral part of both the problem and an area of needed focus. Specific recommendations for the safety of the elderly, the young and the infirm were outlined.

The report outlined recommendations for the Fire Service in terms of personnel training and education, equipping fire fighters, planning for fire protection and the need for a National Fire Academy.

There were many additional areas studied and recommendations made, but with regard to the education of fire personnel, the report started in motion a joint effort between Des Moines Area Community College (DMACC) and The Fire Service Institute at Iowa State University (FSI-ISU).

Keith Royer, Executive Director of FSI-ISU, was a prominent figure in the national fire service. Royer and his Chief Instructor Floyd W. “Bill” Nelson were well known for having introduced their “Rate of Flow” formula as a technical contribution to the field. Based on extensive

research this formula proved to be a valuable strategic and tactical tool for planning and fighting structural fires. Royer described Nelson as having one of the finest minds he had ever known. Royer was known nationally and prominent during the time The Commission on Fire Prevention and Control was conducting its study. Royer approached DMACC with the concept of a Fire Science Degree Program. It was an ideal partnership. FSI-ISU provided the technical knowledge and DMACC provided the liberal arts component and the ability to issue Associate of Science degrees.

Advisory Committee Formed

In 1973, an Advisory Committee was formed, which included Charles Grassley, an Iowa State Representative from New Hartford; Reynold Hentges, Assistant State Fire Marshal; Lee Williams, Des Moines Fire Chief; insurance industry executives; additional fire chiefs; Iowa Manufacturers Association representatives; a local representative of the International Association of Fire Fighters, as well as educators.

The president of DMACC in 1973 was Paul Lowery. Gary Wilcox was Dean of General Education and was assigned by President Lowery to work with Royer and his staff at FSI-ISU and the Fire Science Advisory Committee to get the Fire Science Technology Program launched. A curriculum was developed that consisted of 12 credits of communications, 10 credits of mathematics, 12 credits of physical science, 6 credits from humanities, 14 credits of social science, and 3 additional credits from a list of five, 3-credit courses. Six electives rounded out the Arts and Sciences requirements. All of these 63 credits were taught by DMACC full-time or adjunct instructors. The Fire Science component consisted of twelve 3-credit courses.

Fire Science Classes Begin 1974

In 1974, Fire Science classes started and DMACC was on the cutting edge of Fire Service Education, not only in Iowa, but nationally. One Fire Science class per quarter was offered in the evenings at the Ankeny Campus. Tuition cost \$13 per credit or \$39 per 3-credit course. The first Fire Science course was filled by 20 students. Thirteen in the original class were members of fire departments in Des Moines, Ames, Marshalltown, and Ankeny.

The core Fire Science classes were taught by four members of the Fire Service Institute staff. Royer had assembled a superb group of instructors including Floyd W. "Bill" Nelson who was a self-educated brain trust and the chief instructor at FSI-ISU. Roger Sweet and William "Bill" Simpson were both graduates of the Oklahoma State Fire Protection Engineering Program and had grown up in the fire service as sons of fire chiefs. Simpson had worked at Armstrong Tire and Rubber Company as head of safety, security, and fire protection. Sweet was being groomed to take over the helm at the Institute when Royer reached retirement.

The initial courses were offered as follows:

- Winter 1973: "Introduction, History, and Philosophy of Fire Science," instructed by Roger Sweet and Bill Simpson
- Spring 1974: "Fire Protection Systems and Equipment," instructed by Bill Simpson
- Fall 1974: "Fire Behavior I," instructed by Bill Nelson
- Winter 1974: "Building Design for Fire Protection," instructed by Robert J. Ruby, insurance executive for Employers Mutual Insurance
- Spring 1975: "Industrial Fire Protection and Security," instructed by Bill Simpson
- Fall 1975: "Fluid Flows," instructed by Roger Sweet
- Winter 1975: "Fire Investigation," instructed by Reynold Hentges, Assistant State Fire Marshal
- Spring 1976: "Strategic Planning for Fire Protection," instructed by Keith Royer
- Fall 1976: "Hazardous Materials," instructed by Roger Sweet
- Winter 1976: "Tactics for Fire Protection," instructed by Keith Royer
- Spring 1977: "Fire Protection Administration and Management," instructed by Bill Simpson
- Fall 1977: "Principles of Insurance*," instructed by C. D. Honing, insurance company executive

*"Principles of Insurance" was added to the curriculum in place of "Fire Behavior II." Fire Behavior I and II were combined into a single course at that time.

With three of the Fire Science courses offered per year, it took four years for a student to complete those courses plus additional time to complete the liberal arts requirements. In 1978 DMACC awarded associate degrees in Fire Science Technology to the first two students to graduate from the program in the State of Iowa: Kenneth Danley, a firefighter with the Des Moines Fire Department and Michael Cherry, Ankeny's first full time Fire Captain. Cherry was promoted to Ankeny's first full time Assistant Fire Chief. Danley would become the Fire Marshal on the Des Moines Fire Department in the early 1980s. He spent the rest of his career serving the City of Des Moines. Cherry was promoted to Assistant Chief and eventually left the Ankeny Fire Department to spend several years in the private sector. In 1994, he went to work for FSI-ISU and in 2000 became DMACC's first full-time Fire Science instructor.

Another early graduate of note was George Oster, Chief of the West Des Moines Fire Department. Oster was hired in the early 1980's by FSI-ISU and soon assumed some of the teaching load in the Fire Science Program at Ankeny and other community colleges that FSI-ISU

had partnered with to follow in the footsteps of DMACC. Oster eventually became the Executive Director of FSI-ISU.

DMACC Takes Over Complete Program

FSI-ISU eventually turned the teaching duties over to DMACC in the mid-1980s, due to budget constraints and staff workloads. After DMACC took over the complete program, it hired adjuncts to teach the Fire Science courses. During a reorganization, DMACC moved Fire Science Technology to the Department of Health Services and Sciences, under the direction of Burgess Shriver to more closely align Fire Science with the math/science/engineering component of the department. Later, Fire Science was moved once more to the Advanced Technology Center, under the direction of Dean Wayne Merrell. There, Mike Cherry served as program chair until his retirement in 2012.

The Fire Science Technology Program celebrated its 40th year at DMACC in 2014.