

Acceptance Speech of
PROFESSOR BASIL A. PRUITT
Co- Winner of the 2008
King Faisal International Prize for Medicine
Sunday 09 March 2008 (1.3.1429H)

Your Majesty, King Abd Allah Ibn Abd Al- Aziz
Your Royal Highness, Prince Sultan Ibn Abd Al- Aziz

Your Highnesses
Your Excellencies
Distinguished Guests

I would like to thank the King Faisal Foundation for the signal honor of having been chosen as a Co-Winner of the 2008 King Faisal International Prize in Medicine which I consider a true benchmark of my professional career. The Prize Committee of the King Faisal Foundation has the charge to select recipients whose work has advanced our understanding of disease and benefitted humanity. That committee has designated fifty-one individuals from twelve different countries as recipients of the King Faisal International Prize in Medicine since 1982 when the first such prize was awarded. Review of the work of those winners, such as that of Dr. Tom Starzl, confirms that they have individually and collectively improved the health and healthcare of countless thousands, and thereby documents the success of the Foundation founded by his sons to memorialize King Faisal.

It is a great pleasure to add recent advances in burn patient management to the body of work of the previous recipients of this Prize. Those advances resulted from the collective efforts of many and I hasten to share this honor with all of the fine surgeons and other scientists with whom I have had the privilege of working to bring about the improvements in burn care that have been recognized by the Prize Committee.

I will briefly cite four, among several, landmark improvements to illustrate the effectiveness of integrated clinical/laboratory biomedical research, which I consider to be the most efficient format of patient oriented biomedical research. That process consists of experienced surgeons identifying a significant clinical problem in burn patients, taking that problem to the laboratory, collaborating with laboratory scientists possessing state of the art research capability to develop a solution to the problem, bringing that treatment back to the bedside and then assessing the clinical effectiveness of the new treatment and identifying new problems to start the bedside to bench to bedside journey again.

The use of physiologically based resuscitation programs developed by that reiterative research process prevents the development of burn shock and avoids the consequences of excessive fluid administration. It has essentially eliminated early post-injury organ failure and has reduced early mortality. The use of fiberoptic technology for the clinical diagnosis of inhalation injury, combined with laboratory studies describing the associated pulmonary pathophysiology, has allowed the formulation of therapies that have tamed the comorbidity of inhalation injury and further improved survival. Integrated clinical and laboratory studies have also enabled us to define post-injury hypermetabolism, characterize the neurohormonal milieu that

orchestrates nutrient flow, and use that information to design “full-service” metabolic support regimens. Such support regimens, which include environmental control measures, burn-specific nutritional support and modification of endocrine balance prevent surgical starvation, minimize tissue erosion, accelerate convalescence, and improve physical recovery.

The true revolution in burn patient management which occurred in the area of wound care is a prime example of the effectiveness of integrated research. It should be noted that the recommendations of Rhazes, the famous Arabic physician of the 9th and 10th centuries, to treat the burn wound with cold water and yolk of egg combined with attar of roses (tissue protective therapy) were ignored for centuries by European and American physicians who favored a variety of irritative agents that often caused further injury. In the 1960s, the identification of invasive burn wound infections as the major determinant of survival in severely burned patients and correlative laboratory studies led to the development of effective antimicrobial chemotherapeutic agents that not only controlled infections in the burn wound, but also permitted early surgical intervention and prompt closure of the burn wound. The increased survival of massively burned patients then posed the new problem of inadequate skin graft donor sites for timely wound closure. The solution to that problem was the development of synthetic skin substitutes and now culture derived tissue to make possible the early closure of the wounds of patients with extensive burns. Our current analysis of the effects of low amperage electric current on wound healing and other aspects of burn treatment will be accelerated by the funds provided by the King Faisal Prize. In the aggregate, this and the other three advances have materially reduced burn patient mortality in all age groups and made survival of patients with massive burns commonplace.

Equally important in a professional career are the educational and mentorship activities through which successors and future independent contributors to the field are developed. Important societal benefits have been realized from the subsequent work of the physicians and other scientists who contributed to the advances noted above as they have become leaders in burn care and research, as well as other fields of surgery and medicine. The forty-six directors of burn centers and burn units in the United States and other countries who worked at the Institute of Surgical Research are a source of particular satisfaction. I thank the King Faisal Foundation Prize Committee again and with great pride join the other recipients of this Prize.