

## Giants in Chest Medicine

### Neil R. MacIntyre, MD, FCCP



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Extraordinary person; clinician; researcher and master educator. This is how the hundreds of clinicians he has successfully mentored describe Dr Neil MacIntyre. I am honored to provide this introduction, but challenged to do so in the limited space allotted. Dr MacIntyre knew in his high school years that the unique mix of people and science that is the profession of medicine was perfect for him. So, after obtaining his undergraduate degree from the University of California, San Francisco, the native Californian decided to head east and tackle the big city. He obtained his medical degree in 1972 from Cornell University Medical College. While in medical school, his future father-in-law introduced him to the field of anesthesiology and Dr MacIntyre found his love of physiology. He completed his internship and residency in internal medicine at Cornell, and that love for physiology propelled him toward a career in cardiology or pulmonary and critical care medicine. After residency, Dr MacIntyre gave 3 years of service to the nation in the Navy Medical Corps as a naval aviation physician. His work with the pilots and the physiologic effects of flying and exposure to altitude had on their health sealed his interest in pulmonary medicine. Dr MacIntyre notes, “I went into pulmonary because I think I am a closet mechanical engineer (or maybe closet plumber!). Mechanics, pressures, flows, stress, strain intrigue me. I think that is why I enjoyed my Navy flight surgeon stint so much—aviation principles have many similarities to the principles underlying positive pressure ventilation.”



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He thus returned to the West Coast and completed a fellowship in pulmonary and critical care medicine at the University of California, San Francisco, in 1981. Upon completion of his fellowship, Dr MacIntyre was recruited by Dr James Crapo to come help him build the pulmonary division at Duke University as the Director of Respiratory Care. And there he remains today, 35 years later, as Professor of Medicine and Director of Respiratory Care Services, Pulmonary Function, and Pulmonary Rehabilitation. “Duke has given me unique opportunities. The institution has given me invaluable protected time as medical director to explore better ways of doing things, be involved with national/international initiatives, and develop teaching skills by my involvement in many CHEST programs.”

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**ADDITIONAL INFORMATION:** See [video](#) interview of Dr MacIntyre online at [journal.publications.chestnet.org](http://journal.publications.chestnet.org).

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Although this was not the path he had originally envisioned, he followed the advice he now often gives young physicians: keep your eyes and ears open and pursue opportunities, as you never know where you might end up. Dr MacIntyre ended up surrounded by wonderful respiratory therapists who introduced him to the devices and gadgetry of pulmonary function testing and mechanical ventilation. It was this early partnership that allowed Dr MacIntyre to use his expertise in clinical medicine and patient care to inform the plumbing and mechanics of the machines to improve patient comfort and outcomes. The collaboration led to the birth of pressure support ventilation as a standalone mode. Thus began a magnificent career that has furthered our understanding of mechanical ventilation modes, patient-ventilator interactions, ventilator-induced lung injury, and ARDS. Undoubtedly, some of his greatest contributions to patient care have resulted from his participation on the ARDS Network steering committee for the past 18 years. How many of us can say we were part of a trial that led to an intervention that could decrease absolute mortality of a disease by 10%?

Dr MacIntyre's partnership with engineers went beyond ventilators. Through his work in the pulmonary function laboratory, he was able to devise and standardize the single breath method of determining the diffusing capacity. Since that time, Dr MacIntyre has been a panel member of the joint American Thoracic Society/European Respiratory Society Statements on all aspects of pulmonary function testing.

In his [video](#), Dr MacIntyre describes how seizing opportunities as they arose shaped his career in academic medicine. He also offers some excellent life lessons. In addition to being open to new professional opportunities and pathways, Dr MacIntyre advises us to maintain a strong network outside of work and pursue other interests, allowing us to cope and resist when the inevitable feelings of stress and burnout might arise.

Interestingly, but not surprisingly, Dr MacIntyre downplays his excellence in teaching. And yet, I contend that this skill is another reason he is a giant in chest medicine. I've never seen an educator that can so consistently and effortlessly present complex, complicated, interrelated topics in such a way that they are suddenly straightforward, simple, and understandable, as he has done for thousands of caregivers. My career as a clinician, educator, and researcher has been enhanced immeasurably by listening to and emulating Dr MacIntyre, and I am certain that I am not alone. Students of his learn not only

the material, but also how to teach the material to peers and patients. Dr MacIntyre is a giant in chest medicine who exemplifies patient-centered care through his clinical practice, research, and education of the next generations of providers. I am so lucky to call him my mentor, and my friend.

## Suggested Readings

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