The discovery of cryoprecipitate as a modality for hemophilia A: Augmenting the allocation of credit

We join with Swenson and Hollenhorst in recognizing Dr Judith Pool's pivotal role in revolutionizing the treatment of hemophilia A through exploiting her preliminary observations regarding the cold insoluble nature of Factor VIII by harvesting cryoprecipitate material in blood banks through a closed bag system. In addition, Pool's proximity to the plasma fractionation industry in the United States allowed her, together with her colleagues including EJ Hershgold, to rapidly develop potent lyophilized concentrates of Factor VIII using cryoprecipitate as starting material. As we have previously reported, we would encourage similar recognition of the work of the French physician and hematologist Emile Rémigy, who characterized cryoprecipitate and used it to treat hemophilia A 10 years before Pool published her seminal work. Rémigy's work was published as a PhD thesis toward a Doctor of Medicine degree from the Faculty of Medicine in the University of Nancy in 1955 (Figure 1), and its publication in French, followed by Rémigy's death in a railroad accident in 1961, precluded its recognition. As in many other scientific discoveries, cryoprecipitate’s application in hemophilia was “rediscovered” by Pool, who doubtlessly unintentionally had no awareness of Rémigy’s PhD thesis, and whose publications in *Nature* and *The New England Journal of Medicine*, together with global scientific meetings, clearly attracted much more attention than a University PhD thesis published in French. As has occurred several times in the history of science, a discovery without accessible dissemination of information has little or no impact. In this instance, a later independent rediscovery accompanied by the appropriate dissemination generated the universal utilization of the discovery.

**FIGURE 1** Emile Rémigy and his 1955 thesis describing the production and use of cryoprecipitate in treating patients with hemophilia A.
Rémy's work in hemophilia in the early development of care in France was recognized through the designation of a Red Cross “Centre Emile Rémy” caring for French hemophiliacs in Montain, France, clearly showing that, in his own environment, this pioneer deserves the gratitude of our community of people with bleeding disorders. In the current era of innovative therapies for hemophilia, and with the prospect of a cure through gene therapy, it is apt to recognize those who, with minimal resources and bereft of our current awareness, contributed to the survival of our hemophilia community. We therefore propose that the global blood transfusion community recognizes Rémy and Pool as the co-discoverers of cryoprecipitate as the first widely accessible therapy for hemophilia A.

CONFLICT OF INTEREST
The authors have disclosed no conflicts of interest.

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