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## Scaling Mount Impossible: A Festschrift for Dudley Herschbach

Bretislav Friedrich <sup>a</sup> , Sabre Kais <sup>b</sup> & David Mazziotti <sup>c</sup>

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<sup>&</sup>lt;sup>a</sup> Berlin

b West Lafayette

<sup>&</sup>lt;sup>c</sup> Chicago



#### **PREFACE**

### Scaling Mount Impossible: A Festschrift for Dudley Herschbach

The title of this Festschrift is intended to reflect three dicta that the jubilarian has invoked with collegiate spirit throughout his career, and has passed on to his scientific progeny: "The difficult we do immediately. The impossible takes a little longer" (adopted from the Seabees [1]); "Ontogeny recapitulates phylogeny" (amplified in Richard Dawkins' masterpiece on evolution, Climbing Mount Improbable [2]); and the "scaling laws and form factors" (including Dimensional Scaling) that Dudley has discovered in his scientific work and that have revealed so much about why things molecular – and other – are the way they are. The title also implies Dudley's fourth dictum, "Keep going!" by which he has lived with an unmatched vigour and fortitude.

This Festschrift, comprised of papers written in Dudley Herschbach's honour by his colleagues and former students and associates, celebrates his distinguished career. In addition, it offers a rich collection of prefatory material, including an extensive interview, a list of Dudley's students and coworkers, as well as the Eighty Papers, a list of his own favourite publications that he has compiled for this occasion. The full list can be found at Dudley's website at Harvard [3] or at Texas A&M [4], along with two definitive reviews of his scientific work [5,6], essays on issues ranging from teaching to science funding, and much more - including some of his treasured lecture notes. The prefatory section closes with Dan Kleppner's essay on aspects of the well-known "Herschbach effect."

Richard Feynman once asked himself "If we could pass on to posterity only one short sentence, what should it be?" His reply was "There really are atoms [7]". Although a fervent believer in the immense

value of science, Dudley offered a different answer: "The most important thing really is love!" And here is why: "With love comes awe, reverence, and compassion. With love, you know that whatever disappointments or struggles lie behind or ahead, you are blessed. Beyond talent and energy, you can bring passion, vision, commitment to whatever you undertake. You can foster in yourself and others the awareness of opportunity, the fellowship of striving, the joy of discovery, the satisfactions of genuine service". And he added "So I'm glad to confess unabashedly my love for my life in science and the many wonderful people, ideas, and molecules that have come with it [8]".

We, in turn, likewise confess a similar affection, and on this special occasion of his grand personal anniversary it is all directed towards the jubilarian: Happy birthday, Dudley!

Bretislav Friedrich (Berlin) Sabre Kais (West Lafayette) David Mazziotti (Chicago)

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- [7] Dudley Herschbach's paraphrase of R. Feynman, *Six Easy Pieces* (Perseus Books, Caltech, 1963), p. 4.
- [8] D. Herschbach, Speech at the Research Corporation Centennial, Washington, D.C., March 14, 2012.