

Biorobotics in the Age of Integration

R.J. Full

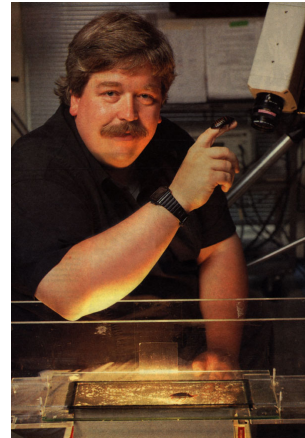
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Professor Full directs the Poly-P.E.D.A.L. Laboratory which studies the Performance, Energetics and Dynamics of Animal Locomotion (P.E.D.A.L.) in many-footed creatures (Poly). His research laboratory applies the same techniques used in the study of human gait - 3D kinematic, force platform, and EMG analysis - but in miniature. His internationally recognized research program in comparative physiology and biomechanics has shown how examining a diversity of animals leads to the discovery of general principles of locomotion. General principles can then be used as hypotheses to explain the remarkable diversity in physiology and morphology in nature. His programmatic theme is Diversity Enables Discovery. At the same time, discovering the function of simple, tractable neuromechanical systems along with a knowledge of evolution can provide new design ideas applicable to the control of animal and human gait. Recently, Professor Full's research has focused on the role of the mechanical system in self-stabilization.

Full's research also has provided biological inspiration for the design of multi-legged robots and computer animations. His research interests extend from analyzing the pitching motion of a Hall of Fame pitcher to assisting computer animators make children's movies (Pixar/Disney Bug's Life). In 1990 Full received a National Science Foundation Presidential Young Investigators Award. In 1994 he presented his research at the Annual Meeting of the National Academy of Sciences. Professor Full's research has been featured in the popular press such as newspapers, various science

magazines and on several television shows (CNN, NBC Today Show, ABC World News Tonight, Discovery Channel).



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