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Using Excel To Study The Relation Between Protein Dihedral Angle Omega And Backbone Length¹ CHRISTOPHER SHEW, SAMARI EVANS, XIUPING TAO, Winston-Salem State University — How to involve the uninitiated undergraduate students in computational biophysics research? We made use of Microsoft Excel to carry out calculations of bond lengths, bond angles and dihedral angles of proteins. Specifically, we studied protein backbone dihedral angle omega by examining how its distribution varies with the length of the backbone length. It turns out Excel is a respectable tool for this task. An ordinary current-day desktop or laptop can handle the calculations for midsized proteins in just seconds. Care has to be taken to enter the formulas for the spreadsheet column after column to minimize the computing load.

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