

FORTY-FIVE YEARS OF TEACHING GEOPHYSICS LABORATORY EXERCISES

William Sauck, Western Michigan University

This will be a wide-ranging presentation reviewing my 45-year history of teaching geophysics. Emphasis will be on equipment and computers as used in practical laboratory exercises. Examples of some of the topics to be presented are as follows. The advantages and disadvantages of having and using the latest equipment and software. Convincing a University to permit building a field geophysical test site. Design and use of the geophysical test site. Things that can be done indoors when inclement weather prevents a scheduled outdoor exercise. The water-filled modeling tank for electrical resistivity exercises. How to simulate a large horizontal conductive sheet for an EM exercise using several meters of wire. Using existing University buried utilities as targets for field exercises. Steel flagpoles and magnetic surveying. Handling and care of the wires, ropes, and tape measures used for surveying. Dealing with dogs, cattle, horses, turkeys and small boys during off-campus exercises. Causing surreptitious instrument power failures and observing student recovery times. Getting across the concepts regarding the need for 4-electrode systems (vs. 2-electrode) for resistivity work, using body potentials, different metal electrodes, beakers of water, contact resistances, etc. Building your own non-polarizing electrodes. In summary, these and other tips and experiences presented here may be helpful to young PhD's who are starting their academic careers.