

## Foreword

The scientific enterprise known as “automated reasoning” seeks to construct computer programs that can make original and important contributions to mathematics. In four decades of practical work, the field has progressed from solving very simple problems in mathematical logic to the occasional solution of difficult, open mathematical questions.

The history of automated reasoning has been blessed with a singular leader, namely, Larry Wos. His position as foremost leader has been clearly recognized:

- founding editor of the *Journal of Automated Reasoning*
- first president of the Association of Automated Reasoning
- first winner of the American Mathematical Society’s current prize in automated reasoning (shared with Steven Winker)
- first winner of the Herbrand Award in Automated Deduction

His scientific papers, assembled here, constitute a very significant part of Wos’s enormous contributions to automated reasoning.

As all his friends will testify, Wos is an utterly ingenious fellow, a singular character, a truly wonderful person. Perhaps in the spirit of a Zen master, Wos has occasionally claimed that he is not a scientist at all. Although I know no better scientist than Wos, I think reporting his claim not to be a scientist will help those who have not had the privilege of knowing him to understand the enormous energy and joy with which Wos does his work. His appetite for inventing strategies to enhance Argonne’s several automated reasoning programs is voracious. Equally amazing is his stamina for examining in extensive detail the results of running the Argonne programs on a multitude of examples. But I suspect that the reason that Wos might be reluctant to claim the title scientist is that he imagines that society would permit no proper scientist to experience the passionate ecstasy that Wos does in carrying out his research.

Some of Wos’s papers assembled here, especially the early ones, reflect the tenor of the traditionally austere mathematical journal, so often dry as dust. The field’s early emphasis upon often sterile “completeness results” as the ultimate criterion of achievement was an idol to which Wos necessarily paid tribute in his earliest years. But as his later writings increasingly demonstrate, and as the wonderful introductory vignettes reveal, Wos passionately wishes to invite his reader to join in what Wos finds to be both the noblest and most rewarding of human experiences, the development of the power to reason.

“Reason more than anything else is man,” said Aristotle. Like Aristotle, Wos has found, and wishes to share with all, a maximal good, a thinking that is a “thinking of thinking”.

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