

# Working With Mike on Distributed Computing Theory, 1978-1992

Nancy Lynch  
Massachusetts Institute of Technology  
Laboratory for Computer Science  
200 Technology Square  
Cambridge, MA 02139  
lynch@lcs.mit.edu

## Abstract

I have had the honor of working with Mike Fischer on no fewer than 15 projects in the area of distributed computing theory, plus a few others in other areas. The results of some of these projects, like the one with Mike Paterson on impossibility of consensus, are very well known in the PODC community and elsewhere. Others are less well known, but I think are interesting anyway.

I will take the opportunity of Mike's birthday celebration to review the many papers we have written together and describe their contributions. I will put the ideas of these papers in the context of earlier and later distributed computing theory research.

These papers cover a wide range of topics within distributed computing theory. The papers include algorithms and/or impossibility results for mutual exclusion, k-exclusion, optimal resource placement in networks, consensus (synchronous and asynchronous), global snapshots, and implementing reliable communication over unreliable channels. One paper establishes a quantitative difference between the capabilities of synchronous and asynchronous systems. Another, dated 1980, presents an early levels-of-abstraction proof for a complex mutual exclusion algorithm. Yet another, dated 1979, presents a very early compositional model for fair asynchronous systems.

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