

## Curriculum Vitae Jorge Nocedal

### Education:

Ph.D. in Mathematical Sciences, Rice University, 1974--1978.  
B. Sc. in Physics, National University of Mexico, 1970--1974.

### Professional Experience:

ECE Department, Northwestern University:  
Bette and Neison Harris Professor of Teaching Excellence 1998 – 2001  
Professor, 1992 – present  
Associate Professor, 1986 – 1992  
Assistant Professor, 1983 – 1985.

Courant Institute of Mathematical Sciences, NYU,  
Visiting Assistant Professor and Research Associate, 1981 – 1983.

IIMAS, National University of Mexico, Assistant Professor, 1978 – 1981.

### Synergistic Activities:

Director, Computational Science Institute, Northwestern University, 2001– present  
Founding Director, 1994-2000, (with Steve Wright), Optimization Technology Center,  
Northwestern-Argonne

*Mathematical Programming*, Co-Editor 1995 – 2001.

*SIAM Journal on Optimization*, Associate Editor, 1989 – present.

*Mathematical Programming*, Associate Editor, 1989 – present.

*Mathematics of Computation*, Associate Editor, 1991 – 1995.

Co-developer of L-BFGS and Knitro, two widely used optimization packages

Co-developer of *Engineering First*, a new curriculum for engineering education at Northwestern

### Five Publications Closely Related to the Proposed Project:

1. *Wedge Trust Region Methods for Derivative Free Optimization*, *Mathematical Programming*, 91 (2002) 2, 289-305, by M. Marazzi and J. Nocedal
2. *Knitro-Direct: A Hybrid Interior Algorithm for Nonlinear Optimization*, submitted for publication in *Mathematical Programming*, by R. Waltz, J.L. Morales, J. Nocedal and D. Orban, August, 2003.
3. An Interior Point Method for Large Scale Nonlinear Programming (1999), *SIAM J. Optimization*, 9, 4, pp.877-900, by R. Byrd, M.B. Hribar, and J. Nocedal.

4. Automatic Preconditioning by Limited Memory Quasi-Newton Updating (2000), *SIAM J. Optimization*, 10,4, pp. 1079-1096, by J.L. Morales and J. Nocedal.
5. On the Solution of Equality Constrained Quadratic Programming Problems Arising in Optimization, *SIAM. J. Scientific Computing*, 23,4, pp. 1375-1394, (2001) by N.I.M. Gould, M. Hribar and Nocedal.

**Five Other Significant Publications:**

6. *On the Convergence of Newton Iterations to Non-Stationary Points*, *Mathematical Programming*, 99,1, pp.127-148, (2004), by R. Byrd, M. Marazzi and J. Nocedal.
7. *Feasible Interior Methods Using Slacks for Nonlinear Optimization*, *Computational Optimization and Applications*, Vol 26,1, (2003), by R. Byrd, J. Nocedal and R. Waltz.
8. *On the Convergence of Successive Linear Programming Algorithms*, Report OTC 2003/03, Optimization Technology Center, March 2003, by R. Byrd, N. Gould, J. Nocedal and R. Waltz, submitted for publication in *SIAM J. Optimization*
9. *An Active-Set Algorithm for Nonlinear Programming Using Linear Programming and Equality Constrained Subproblems*, Report OTC 2002/04, Optimization Technology Center, October 2002, by R. Byrd, N. Gould, J. Nocedal and R. Waltz, to appear in *Mathematical Programming B*.
10. A Trust Region Method Based on Interior Point Techniques for Nonlinear Programming, *Mathematical Programming A*, 89: 149-185 (2000), by R. Byrd, J. C. Gilbert and J. Nocedal.

**Research Collaborators:**

The following scientists have collaborated with the principal investigator during the last 48 months:

Richard Byrd (University of Colorado, Boulder),  
Nick Gould, (Rutherford Appleton Lab),  
Annick Sartenaer (CERFACS, France),  
Jose Luis Morales (ITAM, Mexico)

**Graduate Students and Postdoctoral Associates:**

The PI has supervised the following graduate students during the past five years: Marcel Good, Guanghui Liu, Marcelo Marazzi, Richard Waltz, Gabriel Lopez, Long Hei, Darin Diachin. The following postdoctoral scholars have worked with him at Northwestern University: Michael Gertz, Jean Pierre Goux, Xavier Jonsson, and Dominique Orban.

**Thesis Advisor:** Richard Tapia, Rice University