

Biographical Sketch Andrew J. Christlieb

- **Professional Preparation**

Institution	Major/Area	Degree/Training
Univ. of Michigan-Dearborn	Mathematics	BS (1991 - 1996)
Univ. of Michigan-Dearborn	Electrical Engin.	BS (1991 - 1996)
Univ. of Michigan-Dearborn	Engin. Math	BS (1991 - 1996)
Univ. of Wisconsin-Madison	Applied Math	MS (1996 - 1998)
Univ. of Wisconsin-Madison	Mathematics	Ph.D. (1998 - 2001)
Univ. of Michigan-Ann Arbor	Aerospace Engin.	PostDoc (2001 - 2002)

- **Appointments**

Date Start/End	Title	Institution
5/06 - Present	Assis. Prof.	Department of Mathematics Michigan State University
9/02 - 5/06	Term Assis. Prof.	Department of Mathematics University of Michigan-Ann Arbor
7/01 - 9/02	Research Fellow	Department of Aerospace Engin. University of Michigan-Ann Arbor

- **Relevant Publications**

- Journal

- * A.J. Christlieb, R. Krasny and J.P. Verboncoeur, “A Treecode Algorithm for Simulating Electron Dynamics in a Penning-Malmberg Trap”, *Comp. Phys. Comm.*, 164: 306-310, 2004.
- * A.J. Christlieb, J. Rossmannith and P. Smereka, “The Broadwell Model in a Thin Channel”, *Comm. in Math. Sci.*, 2(3), 443-476, 2004.
- * A.J. Christlieb, et.al. “Grid-Free Plasma Simulation Techniques”, *IEEE Trans. Plasma Sci.*, 34(2): 149-165 Part 1 APR 2006.
- * A.J. Christlieb and S. Olson, “Grid-Free Direct Simulation Monte Carlo”, Accepted to *J. Comp. Phys.* in May 2008.
- * A.J. Christlieb, , et.al. “Integral deferred correction methods constructed with high order Runge-Kutta Methods”, *Math. of Comp.*, to appear,
- * A.J. Christlieb, et.al. “Comments on high order integrators embedded within integral deferred correction methods”, *Com. Appl. Math Comp. Sci.*, Vol 4 (2009), No. 1, pgs 27-56

- Thesis

- * ‘Computational Methods for Long Mean Free Path Problems’, Christlieb A.J, Ph. D. thesis, University of Wisconsin-Madison, 2001.

- **Synergistic Activities**

- **Conferences:** I have presented on grid-free methods at several conferences, where I have received positive feed back. These include: IEEE International Conference on Plasma Science (2003,2004,*invited 2005*, 2009), APS Divstion of Plasma Physics (2004,2005,2007,2008), and SIAM Computational Science and Engineering (2005,2007,2009). I co-orginsied a two day workshop at in March of 2008 at Michigan State University on Multi-Scale Modeling, Analysis and Simulation focussing on wave propagation and transport theory (<http://www.egr.msu.edu/mmas2008/>).
- **Mentoring:** I have been a Co-Advisor to Jerry Emhoff (Aerospace, PhD 2005), Spencer Olsion (Physics, PhD 2006) and Anton VanderWyst (Aerospace, PhD 2006) for at least half of the work related to there thesis. I have mentored two undergraduates; Stephen Marin and Benjamin Sunday. Stephen was a summer REU student in 2005 and Benjamin was supported as part of my AFOSR grant. I was the Post. Doc. advisor for Prof. Jing-Mei Qiu, Colorado School of Mines, (MSU Math, 2007-2008) and am currently the Advisor for one math Post. Doc. (Ben Ong) and three math graduate students (Maureen Morton, David Lawlor and Lee Vangroningen).
- **Teaching:** In addition to calculus 1, 2 and linear algebra, I have taught undergraduate numerical analysis and graduate numerical analysis of ODE's and PDE's, undergraduate and graduate dynamical systems, as well as undergraduate PDE's. Currently I am developing a new course at the undergraduate level focusing on Numerical Boundary Value Problems.
- **Collaboration/Recognition:** Dr. Christlieb has collaborated with the Air Force Research Labs (AFRL) since 2005. He has worked with Dr. Keith Cartwright of AFRL-Kirtland RDHE and Dr. Jean-Luc Cambier AFRL-Edwards PRSA on the development of grid-free particle methods. In recognition of his work, Dr. Christlieb received the 2007 AFOSR – **Young Investigator Award**. Further, Dr. Christlieb is funded as an IPA by AFRL RDHE to provide guidance on algorithm development. In 2008, AFORS invited Dr. Christlieb as one of 10 scientist to represent AFOSR in there external review. Further, in 2008, AFOSR and ONR invited Dr. Christlieb to give one of the four lectures in the 2008 young investigator series.

- **Collaborators & Other Affiliations**

Recent Collaborators:

Name	Title	Institution	Department
David Bortz	Assi. Prof.	Univ. Colorado Bolder	Mathematics
Russel E. Caffisch	Prof.	Univ. of California-LA	Mathematics
Robert Krasny	Prof.	Univ. of Michigan	Mathematics
Keith Promislow	Prof.	Michigan State Univ.	Mathematics

Advisors:

Iain D. Boyd	Prof.	Univ. of Michigan	Postdoctoral
W. Nicolas G. Hitchon	Prof.	Univ. of Wisconsin	Graduate