Christine (Chris) Waigl

Curriculum Vitae

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Address:	Geophysical Institute
	University of Alaska Fairbanks
	903 Koyukuk Drive
	Fairbanks, AK 99775-7320
	USA
Phone:	+1 (907) 474 5483
Email:	cwaigl@alaska.edu
Web:	http://www.gi.alaska.edu/~cwaigl

Education

2012-present	University of Alaska Fairbanks: **PhD student in geophysics**
	· Co-advisors: Dr. Martin Stuefer, Dr. Anupma Prakash
	· Concentration in remote sensing. Completion expected spring 2016
1995-1998	Université Paris 6, France: **graduate studies, statistical physics**
1990-1994	Heidelberg University, Germany , **Diplom in physics**
1988-1990	Erlangen University, Germany: **Vordiplom** (prelim. exam) **in physics**

Research experience

2012-present	Research Assistant, University of Alaska Fairbanks. Current projects*:*
	Boreal forest fire characterization (temperature, severity) with imaging spectroscopy and machine-learning based modeling
	Near real-time retrieval of active fire area and temperature with low-resolution multispectral remote sensing and inverse modeling
	Fire spread and smoke dispersion modeling using the WRF model on the Arctic Region Supercomputing Center (ARSC) GNU/Linux clusters
	Aerial surveys with simultaneous optical and FLIR thermal image acquisition
2011-2012	Research Professional 3, University of Alaska Fairbanks
	Operations support for the US DoE North Slope of Alaska Atmospheric Radiation Measurements (ARM) climate research facility in Barrow, AK
	Corrective maintenance reporting application and other operational software tools: design and implementation (Python)
2000	Research Intern, Musée Curie, Paris, France
	Database of women who worked in Marie Curie's laboratory (FileMaker)
1994-1995	Research Assistant, Chemnitz University of Technology
	Statistical modeling, stochastic optimization (C)
1990-1991	Student Assistant, IMB ISAM, Heidelberg, Germany
	Stochastic optimization in (FORTRAN77)

Teaching experience

Fall 2014	Co-teaching: GIS workshop to State of Alaska Department of Fish and Game employees (Oct 20-21)
Fall 2014	UAF: Mentor for two student projects in GEOS F422 (Geoscience applications of remote sensing)
Spring 2014	University of the Arctic: course development for the Arctic Natural Hazards. Kick-off workshop Arkhangelsk, Russia (March 17-21)
Summer 2013	USDA-GIS workshop at UAF: Mentor for two undergraduate interns. Co-teaching of GIS workshop to faculty and students (July 27-Aug17)

Fall 2013	UAF: Guest lecture in GEOS F422 (Geoscience applications of remote sensing) on remote sensing of active wildfires
2002-2004	Secondary school teacher, Île-de-France public school system, France
1992-1994	Teaching Assistant, Heidelberg University, Germany.
	Theoretical Physics I and II (classical mechanics, classical electrodynamics), Calculus I and II, Linear Algebra

Industry experience

2010-2011	Client Solutions Engineer, Bazaarvoice Inc., London, UK
	Web development, change requests, project management
2006-2011	Technology Operations Manager/Technical Support Lead, Epsilon International, London, UK
	Operational monitoring, issue management, project management
	Up to 9 direct reports (technical support analysts)

Grants and awards

2014	UAF Center for Global Change (CGC) and Arctic System Research Global Change Student Grant competition winner
2013-current	NASA Earth and Space Science Fellowship (NESSF)
1988-1994	German National Merit Foundation (Studienstiftung des deutschen Volkes) scholarship

Publications

2014	Waigl, C. F., Prakash, A., Ferguson, A., and Stuefer, M. (2014). Chapter 24 - Coal fire hazard mapping in high-latitude coal basins: A case study from interior Alaska. In G. B. Stracher, A. Prakash, & E. V. Sokol (Eds.), *Coal and Peat Fires: A Global Perspective, Volume 3, Case studies* (Vols. 1-4, Vol. 3, p. ~ 600). Elsevier. In press.
2014	Stuefer, M., Waigl, C. F., and Kim, C. K. (2014). Alaska wildfire observations and near real-time emission modeling with WRF-Chem. *Proceedings of the International Smoke Symposium* October 21-24, 2013, Hyattsville, Maryland. Extended abstract published by the International Association of Wildland Fire, Missoula, Montana, USA

Conference presentations

Talks

2014	Waigl, C., Prakash, A., Gens, R.: The Arctic seen from space: enhancing STEM education with interactive learning. Presented at the Arctic AAAS conference, Sept 27, 2014, Fairbanks, AK, USA
2013	Waigl, C., Stuefer, M., Grell, G., Prakash, A.: Refining source input for wildfire emissions forecasts with remote sensing and modeling. Presented at the 2013 Alaska Weather Symposium (AWS '13), March 12-13, Fairbanks, AK, USA

Posters

2013	Waigl, C., Stuefer, M., Prakash, A.: Remote sensing of Alaskan boreal forest fires at the pixel and sub-pixel level: multi-sensor approaches and sensitivity analysis. AGU Fall Meeting 2013, B51H-0399
2013	Gens, R., Prakash, A., Ozbay, G., Sriharan, S., Balazs, M. S., Chittambakkam, A., Starkenburg, D. P., Waigl, C., Cook, S., Ferguson, A., Foster, K., Jones, E., Kluge, A., Stilson, K.: A Prototype Two-tier Mentoring Program for Undergraduate Summer Interns from Minority-Serving Institutions at the University of Alaska Fairbanks. AGU Fall Meeting 2013, ED43B-0768
2012	Sub-pixel characterization of Alaskan boreal forest fires using medium-resolution satellite-borne infrared remote sensing. AGU Fall Meeting 2012, NH53A-1813
2012	Waigl, C., Stuefer, M., Perkins, B., Ivey, M., Zirzow, J., Brower, W., Ivanoff, J., Stuart, C.L: NSA Corrective Maintenance Reporting: A Status Report. Poster presented at the ARM Science Team Meeting, Crystal City, VA, March 15, 2013

Non peer-reviewed reports

2011	Stuefer, M., Engle, K. & Waigl, C. WRF/Chem Modeling for Exceptional Events (Wild Fire) Waiver Request, Report to Alaska Department of Environmental Conservation (ADEC) Air Quality Division and Fairbanks North Star Borough
1994	Waigl, C. On the modeling of flux equations for one-dimensional fermion systems (Zur Lösung von Flußgleichungen für eindimensionale Fermionensysteme). Diplom Thesis, Heidelberg University

Software

pygaarst	A Python module for geospatial analysis and remote sensing. https://github.com/chryss/pygaarst

Skills

Natural languages

German (native language). Fluent in English and French (written and spoken).

Technical skills

Computer programming, current: Python, R, Matlab, NCL, Javascript, HTML, SQL, shell scripting
Computer programming, familiar: C, Fortran, Haskell, PHP, Perl
Software engineering: Prince 2 Foundation certificate (project management), git, SVN
Software operations: ITIL environment, change management, issue management

Memberships

Society for Industrial and Applied Mathematics (SIAM) — since 2013
American Geophysical Union (AGU) — since 2012
Association for Computing Machinery (ACM) — since 2010

Other interests

Certified ham radio operator (Amateur Extra, AL5E)
Amateur linguist and creator of the Eggcorn Database