FOWLER, CHARLES SIDNEY

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Education

Georgia Institute of Technology, Atlanta, GA	Physics, B.S., 1973
University of Georgia, Athens, GA	Agronomy, M.S., 1981
University of Nebraska-Lincoln, Lincoln, NE	Agronomy, Ph.D., 1988

Continuing Education

Advanced Chemical Methods for Soil and Clay Minerals Research, NATO Advanced Study Institute, Urbana-Champaign, IL 1979
Reducing Radon in Structures Training Course, U.S. EPA Office of Radiation Programs, Alexandria, VA 1988
Eighth Annual Conference on Contaminated Soil, Amherst, MA 1993
Additional Graduate Physics Courses, University of Alabama at Birmingham, Birmingham, AL 1998
Mid-South Community College Fellowship Program, Lake Tiak O'Khata, MS 2001

Professional Positions

U.S. Navy
Communications Officer, Gunnery Officer, CIC Officer (Surface Warfare) 1973-1977
Boggs Academy, Keysville, GA
Temporary Teacher September-December 1977
University of Georgia, Athens, GA
Graduate Research Assistant 1978-1981
University of Nebraska-Lincoln, Lincoln, NE
Graduate Research Assistant 1981-1986
University of Alabama at Birmingham, Birmingham, AL
Research Programmer 1986-1987
Southern Research Institute, Birmingham, AL
Research Physicist 1987-1996
Environmental Consultant, Birmingham, AL
Environmental and Agricultural Research 1996-1997
Jefferson State Community College, Birmingham, AL
Part-time Instructor 1996-1997
Bessemer State Technical College, Bessemer, AL
Full-time Instructor, Division Chair 1997-2005, 2001-2005
Lawson State Community College, Bessemer/Birmingham, AL
Full-time Instructor, General Education Coordinator, Bessemer 2005-2009

Teaching Experience

- Undergraduate tutor for a three-quarter self-paced engineering physics sequence at Georgia Tech.
- Educational Services Officer on the USS Kilauea (AE-26). Duties included administering advancement in rate examinations and conducting GED classes for crew members who had not completed high school.
- Temporary biology, algebra I, and eight grade mathematics teacher at Boggs Academy (completed the semester for a teacher who quit before commencing graduate school).
- Grader (four quarters), teaching assistant (one quarter), and occasional lecturer for a senior/graduate level soil fertility course at University of Georgia. The teaching assistant responsibilities included developing a problem set, a key for graders, and one class period tutorial session each week and holding regular office hours for student consultations throughout the quarter.
- Course coordinator for a junior-level survey course in the College of Agriculture at the University of Georgia. Duties included scheduling lecturers, conducting problem sessions, developing and grading tests, and reporting grades to the administration.
- Substitute lecturer for major professor when needed in a doctoral level soil physics course at the University of Nebraska-Lincoln.
- Volunteer physics, mathematics, and chemistry tutor for the University of Alabama at Birmingham Campus Counseling Center.
- Instructor for the Radon Measurement and Mitigation Training Course for the Southern Regional Radon Training Center at Auburn University.
- Part-time science and mathematics tutor for the University of Alabama at Birmingham Athletic Department.
- Part-time mathematics instructor at Jefferson State Community College.
- Full-time mathematics, physics, and horticultural soils and fertilizers instructor at Bessemer State Technical College.
- Contributor of several mathematics features to an Automotive Excellence text.
- Chair of the General Education Division at Bessemer State Technical College.
- Coordinator of the General Education Program for the Bessemer Campus of Lawson State Community College.
- Full-time mathematics, physics, and physical science instructor at Lawson State Community College.
- Chair of the Mathematics Department of Lawson State Community College.

Research Experience

Mineralogy of soils using x-ray diffraction and transmission electron microscopy, mineral deposition in the regions around root hairs of corn plants using scanning

electron microscopy and energy dispersive spectrometry, measurement of changes in bulk density and water content of a swelling medium using dual energy gamma radiation attenuation, development of an analytical-empirical model to describe water flow through such an expanding medium, statistical analyses of large data bases using the Statistical Analysis System (SAS) software package both on mainframe and microcomputers, mechanisms of radon gas entry into the living spaces of houses and large buildings, techniques to mitigate existing houses to control the levels of indoor radon concentrations, development of sub-slab depressurization design parameters for slab-on-grade houses built over a tightly compacted sand or soil fill, analysis of long-term/short-term radon measurement results in an 80-house year-long study covering four regions of Florida, development of radon entry models in residential and other structures, evaluation of construction features that inhibit radon entry in new houses and larger buildings constructed on high radon potential soil, development of a diagnostic procedure to evaluate and implement radon reduction in large buildings, review and development of particle size test methods for sampling high temperature and high moisture source effluents, evaluation of the use of electro-osmotic movement of soil water in forming barriers to air and contaminant movement in soil profiles, collection and recording of soil samples of residential sites contaminated by industrial chemicals.

Honors

Georgia Institute of Technology
: High Honors in Physics; Phi Eta Sigma; Tau Beta Pi; Phi Kappa Phi; Naval ROTC Senior Leadership Award

University of Georgia
: E. G. Dawson Graduate Fellowship; Graduate School Research Assistantship

University of Nebraska-Lincoln
: Widaman Trust Distinguished Graduate Assistant Award

The Alabama College System
: Award of Excellence (Class of 2003 Chancellor's Awards)

Membership, Professional Societies

American Society of Agronomy
Soil Science Society of America
Gamma Sigma Delta
Sigma Xi
Alabama College Association
Mid-South Community College Fellowship Program

Professional Activities

Florida Radon Research Program Technical Reviewer 1989-1995

Water Resources Research Technical Reviewer 1995
Glencoe Automotive Excellence, Academic Applications, Volume 2, Contributor 2001

Presentations

1. Pyle, B.E.; Williamson, A.D.; Fowler, C.S.; Belzer, F.E., III; Osborne, M.C.; Brennan, T. Radon mitigation techniques in crawl space, basement, and combination houses in Nashville, TN. Paper presented at 81st Annual Meeting of Air Pollution Control Association. Dallas, TX; 1988 June.

2. Pyle, B.E.; Williamson, A.D.; Fowler, C.S.; Belzer, F.E., III; Osborne, M.C.; Brennan, T. Radon mitigation techniques in crawl space, basement, and combination houses in Nashville, Tennessee. Paper presented at the EPA 1988 Symposium on Radon and Radon Reduction Technology. Denver, CO; 1988 October 17-21.

3. Fowler, C.S.; Williamson, A.D.; Pyle, B.E.; Belzer, F.E., III; Sanchez, D.C.; Brennan, T. Sub-slab depressurization demonstration in Polk County, Florida, slab-on-grade houses. Paper presented at the 1988 Symposium on Radon and Radon Reduction Technology. Denver, CO; 1988 October 17-21.

4. Fowler, C.S.; Williamson, A.D.; Pyle, B.E.; Belzer, F.E., III; Coker, R.N.; Sanchez, D.C.; Brennan, T. Engineering design criteria for sub-slab depressurization systems in low permeability soils. Paper presented at the 1990 International Symposium on Radon and Radon Reduction Technology. Atlanta, GA; 1990 February 19-23.

5. Fowler, C.S.; Williamson, A.D.; McDonough, S.E. Radon entry studies in test cells. Paper presented at the 1992 International Symposium on Radon and Radon Reduction Technology. Minneapolis, MN; 1992 September 22-25.

6. Swartzendruber, D.; Fowler, C.S. Water absorption and bulk-volume change in swelling porous media: I. Mathematical solution. Paper presented at the 84th Annual meeting of American Society of Agronomy. Minneapolis, MN; 1992 November 1-6.

7. Fowler, C. S.; Swartzendruber, D. Water absorption and bulk-volume change in swelling porous media; II. Experimental assessment. Paper presented at the 84th Annual Meeting of American Society of Agronomy. Minneapolis, MN; 1992 November 1-6.

8. Williamson, A.D.; Fowler, C.S.; McDonough, S.E. Assessing the effectiveness of slab flooring as a barrier to soil gas and radon infiltration. Paper presented at the ASTM Symposium on Airflow Performance of Building Envelopes, Components, and Systems. Ft. Worth, TX; 1993 October 10-11.

9. Fowler, C.S.; McDonough, S.E.; Williamson, A.D.; Sanchez, D.C. Passive radon control feature effectiveness in new house construction in south central Florida. Paper presented at the 1994 International Radon Symposium. Atlantic City, NJ; 1994 September 25-28.

10. McDonough, S.E.; Fowler, C. S.; Williamson, A.D.; Sanchez, D.C. Recommended standards and practices for radon resistant passive construction in slab-on-grade houses. Poster presented at the 1994 International Radon Symposium. Atlantic City, NJ; 1994 September 25-28.

11. McCain, J.D.; Fowler, C.S.; Farthing, W.E. Development of point source PM10 measurement methods. Paper presented at the First North American Conference & Exhibition on Emerging Clean Air Technologies and Business Opportunities. Toronto, Canada; 1994 September 26-30.

Publications

1. Grove, J.H.; Fowler, C.S.; Sumner, M.E. (1982). Determination of the charge character of selected acid soils. Soil Sci. Soc. Am. J. 46:32-38.

2. Pyle, B.E.; Williamson, A.D.; Fowler, C.S.; Belzer, F.E., III; Osborne, M.C.; Brennan, T. (1989). Radon mitigation techniques in crawl space, basement, and combination houses in Nashville, Tennessee. In: Proceedings: The 1988 Symposium on Radon and Radon Reduction Technology, Vol. 1. EPA-600/9-89-006a, pp.7-51-7-64. Cincinnati: U.S. Environmental Protection Agency.

3. Fowler, C.S.; Williamson, A.D.; Pyle, B.E.; Belzer, F.E., III; Sanchez, C.D.; Brennan, T. (1989). Sub-slab depressurization demonstration in Polk County, Florida, slab-on-grade houses. In: Proceedings: The 1988 Symposium on Radon and Radon Reduction Technology, Vol. 1. EPA-600/9-89-006a, pp. 7-65-7-78. Cincinnati: U.S. Environmental Protection Agency.

4. Fowler, C.S.; Williamson, A.D.; Pyle, B.E.; Belzer, F.E.,III; Coker, R.N.; Sanchez, D.C.; Brennan, T. (1990). Engineering design criteria for sub-slab depressurization systems in low permeability soils. In: Proceedings: The 1990 International Symposium on Radon and Radon Reduction Technology, Vol. 4. EPA-600/9-90-005d. Cincinnati: U.S. Environmental Protection Agency.

5. Fowler, C.S.; Williamson, A.D.; Pyle, B.E.; Belzer, F.E., III; Coker, R.N. (1990). Engineering design criteria for sub-slab depressurization systems in

low-permeability soils. EPA-600/8-90-063, 92 pp. Cincinnati: U.S. Environmental Protection Agency.

6. Fowler, C.S.; Williamson, A.D.; Pyle, B.E.; Belzer, F.E., III; Coker, R.N.; Sanchez, D.C.; (1991). Sub-slab depressurization for low-permeability fill material - design and installation of a home radon reduction system. EPA-625/6-91-029, 49 pp. Cincinnati: U.S. Environmental Protection Agency.

7. Williamson, A.D.; McDonough, S.E.; Fowler, C.S. (1991). Development of alternate performance standard for radon resistant construction based on short-term/long-term indoor radon concentrations. Vol. 1 (Technical Report) and 2 (Appendices). EPA-600/8-91-210a and b, NTIS PB92-115211 and 115229, 75 and 69 pp. Cincinnati: U.S. Environmental Protection Agency.

8. Fowler, C.S.; Williamson, A.D.; Pyle, B.E.; Belzer, F.E., III; Coker, R.N. (1992). Radon mitigation studies: south central Florida demonstration. EPA-600/R-92-207, NTIS PB93-122299, 143 pp. Cincinnati: U.S. Environmental Protection Agency.

9. Fowler, C.S.; Williamson, A.D.; McDonough, S.E. (1993). Radon entry studies in test cells. In: Proceedings: The 1992 International Symposium on Radon and Radon Reduction Technology, Vol. 1; EPA-600/R-93-083a, NTIS PB93-196194, pp. 6-106-6-122. Cincinnati: U.S. Environmental Protection Agency.

10. Fowler, C.S.; McDonough, S.E.; Williamson, A.D.; Sanchez, D.C. (1994). Passive radon control feature effectiveness in new house construction in south central Florida. EPA-600/A-94/241, NTIS PB95-155024, 12pp. Research Triangle Park: U.S. Environmental Protection Agency.

11. McCain, J.D; Fowler, C.S.; Farthing, W.E. (1994). Development of point source PM10 measurement methods. In: Proceedings: First North American Conference & Exhibition on Emerging Clean Air Technologies and Business Opportunities. Toronto: Environmental Canada.

12. Williamson, A.D.; Fowler, C.S.; McDonough, S.E. (1995). Assessing the effectiveness of slab flooring as a barrier to soil gas and radon infiltration. In: M.P. Modera; A.K. Persily, (eds.), Airflow Performance of Building Envelopes, Components, and Systems, ASTM STP 1255, pp. 68-78. Philadelphia: American Society for Testing Materials.

13. Williamson, A.D.; Fowler, C.S.; McDonough, S.E. (1996). Test cell studies of radon entry. EPA-600/R-96-010, 136 pp. Research Triangle Park: U.S. Environmental Protection Agency.

14. Fowler, C.S.; McDonough, S.E.; Williamson, A.D. (1996). Effectiveness of radon control features in new house construction: south central Florida. EPA-600/R-96-044, 237 pp. Research Triangle Park: U.S. Environmental Protection Agency.