

JOHN DIGHTON
Rutgers University Pinelands Field Station, PO Box 206, New Lisbon, NJ 08064
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Professional Preparation:

1973-76 Ph.D. Queen Elizabeth College, University of London
1972-73 M.Sc. Ecology, University of Durham
1969-72 B.Sc. General (External London) 2(i), North East London Polytechnic

Appointments:

Full Time

1994 - Director, Division of Pinelands Research, Professor, Institute of Marine & Coastal Sciences (Cook) Department of Biology (Camden), Rutgers University.
1980 - 1993 Research Scientist, Institute of Terrestrial Ecology, Merlewood Research Station
1977 - 1979 Teacher of Biology, St. Olave's Grammar School, Orpington Kent, UK.
1998 - Honorary Lecturer, University of Puerto Rico at Mayaguez, Biology
1987 - 1994 Honorary Lecturer, University of Lancaster
1985 - 1994 Honorary Lecturer, University of Leeds.

Awards: Rutgers University New Brunswick Graduate Teaching Award, 2005.

Synergistic Activities:

Committees:

2004- Editorial Board Mycological Research
2003- Editorial Board of Bartonina
2003 USDA grant review panel: Microbial Plant interaction
2001- Steering committee Field Station database management education: NSF funded project led by Dr. Bill Michener
2000- Pinelands Preservation Alliance Board of Directors; PPA Education committee (member), PPA Barnstead Farm planning committee (member).
2000 - NSF grant review panel: Biocomplexity
2000 - Pinelands Commission Research Advisory Committee
1999 Board of Trustees and Executive Board, New Jersey Aquarium
1998 USDA grant review panel: Soils and Soil Biology
1997 - Editorial Board Soil Biology and Biochemistry
1992 - 1998 Editorial Board Mycological Research
1995 - NJ Department of Fish, Game & Wildlife Endangered and Non-Game Species Program: Critical Areas Committee.
1995 - Environmental Research Partnership of New Jersey (DEP): committee
1995 - Pinelands Long-Term Environmental Monitoring Program: Tech. Advisory Cttee
1995 NSF grant review panel: Conservation and Restoration Ecology

Peer Review: Research grants for NERC, NSF, USDA, Israel Department of Science, NERC, CERC. Journals: New Phytol., Mycol. Res., Mycologia, Mycorrhiza, J. Appl. Ecol., Can. J. For. Res., Scan. J. For. Res., Environ. Pol., Soil Biol. Biochem., Plant & Soil, Appl. Spectr., Castanea, Austr. J. Bot., For. Ecol. Mange., Applied Soil Ecol.

In Service Responsibilities:

1999- Center for Urban Restoration Ecology (CURE) steering committee, Rutgers.
1997- Rutgers Biodiversity steering committee
1996 - Ecology & Evolution Graduate School, Rutgers, executive committee
1996 - Ecology & Evolution Grad. School, Rutgers, admissions committee (Chair 1999 - 2003)

Collaborators and Other Affiliations:

Collaborators and Co-Editors: G. Arbuckle-Keil (Rutgers), J. W. Baxter (UCal Scaremento), A. F. Harrison (ITE Merlewood), L Ruess (U Acehen), M. Haggblom (Rutgers), L. Jonsson (Rutgers), R. Koide (Penn State), R. Lathrop (Rutgers), J. Lussenhop (U. Illinois Chicago), P. McDermott (Rutgers), P. Oudemans (Rutgers), T. Tugay

(Inst Micro – Kiev), A. R. Tuininga (Forham U), J. White (Rutgers) , V. Zheltonozhsky, (Inst Nuclear – Kiev), N. Zhdanova (Inst Micro – Kiev)

Graduate & Postdoctoral Advisors: M.Sc. John Coulson (University of Durham); Ph. D. Mike Llewellyn (University of London)

Student Advisory

Postdoctoral: 1995 Christine Conn, Victoria Foundation Project
1997 - Jim Baxter, start October 1997, National Science Foundation
1998 - Marcella Mascarenhas, start February 1998, National Science Foundation
2000 - Lena Jonsson, start February 2000, USDA

Doctoral: 1995 - Amy Tuininga, primary advisor, start October 1995, Qualifiers Nov 1998
1995 - Jim Baxter, committee member, Pickett, Preliminaries & Qualifiers
1995; defense 1997
1995 - Jill McGrady, committee member, Morin, Preliminaries & Qualifiers, 1995; defense 1997
1995 - Jo Anna Hebbberger, committee member, Co-primary advisor, Hartman started 1995
1996 - Anne Bansemir, committee member, Sukhdeo
1997 - Peiliang Zhu, committee member, Oudemans; defense May 1999
1997 - Shannon Nix, primary advisor, start September 1997 – defended Dec 15 2004
1997 - Melinda Stearn, primary advisor, start September 1997
1997 - Greg Eaton, external committee member, Dartmouth
1997 - Barbara Rogers, committee member, Tate - defended June 1999
1997 - John Kelly, committee member, Tate; defended 1998
2000 - David Burke, external committee member, Newark, Hamerlynk & Hahn
2000 - Melinda Moy, external committee member, Plant Path. Cook; White
2000 – Dongsheng Chi – E&E New Brunswick – major advisor (quit)
2000 – Daniella Linderbasco – Plant Pathology New Brunswick, committee member – Hillman & Oudemans
2000 – Elizabeth Lewis – Plant pathology , committee member Jim White defended 2003
2002 – Sharron Hicks – E&E, Cook, primary advisor with Tamar Barkay
2002 - Dennis Gray – E&E, Cook, primary advisor – defended April 21 2006
2003 – Kristen Ross – E&E Cook, PhD committee (Joan Ehrenfeld)
2004 – Alex Hernandez – E&E, Cook, PhD committee (Mike Sukhdeo)
2004 – Jennifer Adams-Krumins E&E, Cook primary advisor
2004 – Bill Landesman – E&E Cook, PhD, primary advisor
2004 – Monica Torres – Plant Pathology, Cook, Committee member – Jim White
2004 – Rich Lucas (PhD) U. Penn
2005 – Michael Zolkewitz – Drexel committee member (Walter Bien)
2005 – Nicholas Skowronski – E&E, Cook, primary advisor – then committee (major advisor Erick Hamerlynk)
2005 – Elizabeth Barron – Geography Livingston committee member (Rick Schroeder)
2005 – Barbara Edelhauser – Georgian Court committee member (Louise Wootton)
2005 – John Ruppert – E&E primary advisor
2005 – Rachel Ward – E&E Primary advisor with Tamar Barkay
2006 – Andrea Kornblugh – E&E Primary Advisor
2006 – Inga Parker (PhD Ecology & Evolution) Rick Lathrop committee
2006 – Emma Aronson (PhD) U Penn
2007 – Amy Karpati (PhD Ecology & Evolution) Steven Handel
2007 – Stacey Lentini (PhD Ecology & Evolution) Mike Sukhdeo
2007 – Zac Freedman (PhD Ecology & Evolution) Tamar Barkay committee
2007 – Patricia Alvarez (PhD Ecology & Evolution) Jim White committee
2007 - Yiwen Zhao (Ph. D. Ecology and Evolution, New Brunswick)

Masters:

1995 - Matthew Cieri, defense 1995, committee member
1995 - Jeff Nemetz, defense 1995, committee member
1995 - Heather Livezey, started September 1995, primary advisor
1996 - Eleanor Vine - Plan B - independent research credits
1996 - Jeanette Bowers-Altman - Plan B committee/ major
1996-7 Roger Hoden - Plan B committee/major
1996-7 Eleanor Vine - Plan B committee/major
1996-7 Christopher Storke - Plan B committee/major
1997 - Murray McHugh - primary advisor E&E
1997 - Roxanne Robles-Torres - committee U. Puerto Rico, Mayaguez defended June 1999
1998-2001 - Edward Filip - Camden plan B - major advisor
1999 - Leigh-Ann Rowlan - E&E New Brunswick - major advisor- defended Aug 2 2005
1999 - Mike Haberland - E&E committee (Ken Able)
2000 - Ron Smith - Camden plan B major advisor
2001 - Melinda Challis - E&E plan B committee
2002 - 2004 James DeFelice - MS Camden - Plan B non thesis
2002 - Don Brickner - Camden MS thesis primary advisor - defended April 26 2006
2003 - 2005 Rachel Ward - E&E, Cook MS primary advisor with Tamar Barkay - PhD
2002 - Bin Xu - Villanova (MS) committee (Kel Weider) - defended 2004
2002 - Amy Long - E&E Cook, MS committee - defended Sept 2005 (non-thesis)
2004 - Jennifer Kinsky Camden plan B examination committee - defended Sept 2004.
2004 - Tracie Paulson (MS Camden) Plan B major advisor
2004 - Melissa Zimmerman (MS Camden) Primary advisor - research complete 2006
2005 - Michael Boucher (MS Camden) Plan B major advisor
2006 - Jeffrey Rosenman (MS Camden) Plan B Committee member (Sarkar)
2005 - Kristen Lammers (with Arbuckle Keil) thesis
2005 - Alice Chin (with Arbuckle-Keil) Thesis defended May 2007
2006 - Jason Stanwood (MS Camden) Thesis
2006 - David Keller (MS Camden) Thesis
2007 - Jennifer Oberle (MS Camden Biology Department)
2007 - Karena DiLeo (MS Ecology and Evolution, New Brunswick)

Undergraduates:

1995 Sara Scanga, summer internship
1995 Kimberly Fox, summer worker
1996 Nelson Martinez U. Puerto Rico summer intern
1996 Ruben Jimenez U. Puerto Rico summer intern
1996 Gail Sevrens summer intern
1996 Kathy Regan summer volunteer
1996 Tara McCoy, University of Santa Fe, New Mexico - summer-Fall
1996 Edward Martino fall volunteer Camden
1997 Ruben Rovira U. Puerto Rico summer intern
1997 Jim Alderson IMCS summer intern
1997 Uta Shimizu Camden intern (with Mark Morgan)
1997 Erin Garnett summer volunteer
1997 Donna Wilson summer paid worker
1997 Rustin Director paid student w Haggblom & Tate
1997 Emily Hilton paid student w Tate & Haggblom
1998 Thomas Ferzetti, summer intern
1998 Elizabeth Huffnagel, summer intern
1998 Gin Keefer, independent study Rowan College
1998 Anwar Morales, summer intern U. Puerto Rico
1998 Emily Hilton paid student worker w Haggblom & Tate
1998 Erin Garnett paid student worker w Haggblom & Tate
1999 Eric Garcia, summer intern, U. Puerto Rico w Haggblom and Ruess

1999 Elizabeth Arias, summer intern, U. Puerto Rico
1999 Christine Edly, summer intern (IMCS)
1999 Jim DiDinado, summer intern (Camden)
2000 Ivy Koelliker, summer intern (New Brunswick)
2000 Zhiling Gau, summer intern (Swarthmore)
2000 Ingrid Kaszas, summer intern (Swarthmore)
2000 Jessica Williams, summer intern (Swarthmore)
2001 Mary Ann Palmer (Rutgers, Cook)
2001 Lori Smith (Shepherd University)
2001 George Knoll (Rowan College)
2001 Stacey Wallace (Rowan College)
2001 Steve Wilson (Rutgers Camden)
2002 Katherine Murnen (Swarthmore)
2002 Jaimie Hall (Alfred University)
2002 Eric Cohen (Stockton)
2003 Tiffany Mauro (Drew University)
2003 Elena Tartaglia (Drew University)
2003 Aaron Love (Rutgers Cook) G. H. Cook honors thesis
2004 Riina Moshe (Camden) with Shannon Nix
2004 Behnaum Shahrokh (Camden)
2004 Sarah Hart (Mount Allsion, Canada) summer intern
2004 Vanessa McGowan (Rutgers New Brunswick) summer intern
2005 Steven Schultz (College of New Jersey) summer intern
2005 Sylvia Tadros (Rutgers, Camden)
2006 Jennifer Oberle (Rutgers, New Brunswick)
2006 Veronica Kane (Rutgers, Camden)
2007 Alice Zelman (Rutgers, New Brunswick)
2007 Andre Gabriel (Rutgers Camden – paid SARE grant)

Highschool:

1995 Sara Scovronick, summer
1996 Valerie Orth, Moorestown Friends, summer
2004 Erik Ramstak, Haddonfield High, summer
2004 Matthew Campbell, Haddonfield High, summer

Grants:

Victoria Foundation: Managed fire frequency and forest nutritional sustainability in the New Jersey pinelands. \$ 21,100 from 1/01/97 to 12/30/97.

McIntire-Stennis: Soil Biodiversity and Risk Assessment. \$ 75,000 November 1996 - September 1999. With Dr R. Tate (Environmental Science) and Dr. M. Haggblom (Agbiotech).

Rutgers University SROA: Ecosystem Management in Urban Settings. \$ 50,000 December 1996 - June 1997.

Rutgers University SROA: Ecosystem Management in Urban Settings. \$ 50,000 December 1997 - June 1998.

NSF: A comparative ecophysiological approach to understanding multi-species mycorrhizal functioning. IBN-23254 \$70,002 September 1997 - February 1999

NSF: Island biogeography of non-discrete organisms: functional analysis of resource island colonization by saprotrophic fungi using FT-IR microspectroscopy \$ 50,000 January 1998 - December 1998.

NSF: A comparative ecophysiological approach to understanding multi-species mycorrhizal functioning. IBN-9904007; \$274,996 July 1999 - June 2002.

USDA NRI: Biotic and edaphic controls of ectomycorrhizal community structure and function. \$329,498, September 1999 - August 2002

NSF (subcontract from Dr. L. Kaplan, Stroud Water Research Center): Dissolved organic matter biogeochemistry: linking ecosystem processes, community structure and microbial dynamics in streams. \$ 25,192 October 1999 - September 2001.

NJ DEP Biotic Indicators of Atmospheric N Deposition, May 2001 – May 2002, \$ 80,000, joint with Rowan University.

NJ DEP Refining methods for detection of biotic indicators of atmospheric nitrogen deposition, July 2002 – June 2003, \$ 106,801, Joint with Fordham University.

NSF FSML Field Station Improvement Grant for dormitory building at the Pinelands Field Station – Sept. 2002 – Sept. 2005: \$99,990.

USDA Forestry Research: Regional climate and fire danger modeling specific to the pine barrens, June 2002 – June 2004, \$ 38,141

NSF Emergent properties of fungi exposed to long-term radiation: Fungal Ecophysiology, Jan 2002 – Dec 2002, \$ 80,000 linked with Inst. Microbiology and Inst. for Nuclear Research, Ukraine and Inst. Microbiology, Moscow, Russia.

US Fish and Wildlife Service: Effects of fire on the ericaceous understory and edaphic factors and their role in P cycling in the pine barrens ecosystem at Upton Ecological and Research Reserve: Implications for management. January 2003 – October 2004. \$10,236, sub-contract from Fordham University

NJ DEP Refining methods for detection of biotic indicators of atmospheric nitrogen deposition, July 2003 – June 2004, \$ 85,000, Joint with Fordham University.

USDA Forestry Research: Regional climate and fire danger modeling specific to the pine barrens, June 2004 – June 2006, \$ 38,141

NJ DEP Changes in Forest Health and Nutrient Cycling Resulting from Atmospheric Deposition of Nitrogen June 2004 – June 2005, \$ 85,000, Joint with Fordham University

NE SARE, An Integrated Approach to Developing Nutrient Management Schemes for Container-Grown Nursery Crops, \$106,562, 05/01/07 – 04/30/10: PI Zinati, CoPI Dighton

USDA Forest Service, Atmospheric Deposition of Pollutants at the Rutgers University Pinelands Field Station (Silas Little Experimental Forest). \$ 66,000, 10/01/2007-09/30/2010

NSF REU Interdisciplinary Undergraduate Research Projects based on studies in the New Jersey Pinelands. 2008-2011 (PI Bucking, Co-PI Dighton)

Publications:

1978

Dighton, J. (1978) Effects of lime aphid honeydew on populations of soil organisms. *Soil Biology Biochemistry* **10**, 369-376.

Dighton, J. (1978) In vitro experiments simulating the possible fate of aphid honeydew sugars in soil. *Soil Biology Biochemistry* **10**, 53-57.

1983

Dighton, J. (1983) Phosphatase production by mycorrhizal fungi. *Plant and Soil* **71**, 455-462.

Dighton, J. (1983) Phosphatase production by mycorrhizal fungi. In: Atkinson, D.e.al., (Ed.) *Tree Root Systems and their Mycorrhizas*, pp. 455-462.

Dighton, J. and Harrison, A.F. (1983) Phosphorus nutrition of lodegpole pine and Sitka spruce stands as indicated by a root bioassay. *Forestry* **56**, 33-43.

Mason, P.A., Dighton, J., Last, F.T. and Wilson, J. (1983) Procedure for establishing sheathing mycorrhizas on tree seedlings. *Forest Ecology and Management* **5**, 47-53.

1984

1985

Dighton, J. and Mason, P.A. (1985) Mycorrhizal dynamics during forest tree development. In: D. Moore, L. A. Casselton, D. A. Wood and J. C. Frankland, (Eds.) *Developmental Biology of Higher Fungi*, pp. 163-171. Cambridge: Cambridge University Press]

Heal, O.W. and Dighton, J. (1985) Resource quality and trophic structure in the soil system. In: A. H. Fitter, D. Atkinson, D. J. Read and M. B. Usher, (Eds.) *Ecological Interactions in Soil*, pp. 339-354. Oxford: Blackwell]

1986

Dighton, J. (1986) Mycorrhizas. In: K. Jones and P. J. Lee, (Eds.) *Biology in the '80s Vol 5. Applied and Environmental Microbiology*, pp. 161-180. Lancaster: Lancaster University]

Dighton, J., Poskitt, J.M. and Howard, D.M. (1986) Changes in occurrence of basidiomycete fruit bodies during forest stand development: with specific reference to mycorrhizal species. *Transactions of the British Mycological Society* **87**, 163-171.

Dighton, J., Skeffington, R.A. and Brown, K.A. (1986) The effects of sulphuric acid (pH3) on roots and mycorrhizas of *Pinus sylvestris*. In: V. Gianninazi-Pearson and S. Gianninazi, (Eds.) *Mycorrhizae: Physiology and Genetics*, pp. 739-743. Paris: INRA]

Harrison, A.F. and Dighton, J. (1986) A root bioassay for determination of P-deficiency in commercial forest stands. *Journal of Science Food and Agriculture* **37**, 16-17.

Harrison, A.F. and Dighton, J. (1986) A phosphorus-deficiency bioassay for trees and grasses in low nutrient status soils. 957-963p. Montpellier: AIONP/GERDAT. (1985)

Heal, O.W. and Dighton, J. (1986) Nutrient cycling and decomposition of natural terrestrial ecosystems. In: M. J. Mitchell and J. P. Nakas, (Eds.) *Microfloral and Faunal Interactions in Natural and Agro-Ecosystems*, pp. 14-73. Martinus Nijhoff/Dr. W. Junk]

1987

Dighton, J. and Skeffington, R.A. (1987) Effects of artificial acid precipitation on the mycorrhizas of Scots pine seedlings. *New Phytologist* **107**, 191-202.

Dighton, J., Thomas, E.D. and Latter, P.M. (1987) Interactions between tree roots, mycorrhizas, a saprotrophic fungus and the decomposition of organic substrates in a microcosm. *Biology and Fertility of Soils* **4**, 145-150.

Harrison, A.F. and Dighton, J. (1987) Phosphate fertilizer - what your spruce and pine need. *Forestry and British Timber* **October 1987**, 19-21.

Jones, H.E., Harrison, A.F. and Dighton, J. (1987) A 86Rb bioassay to determine the potassium status of trees. *New Phytologist* **107**, 695-708.

Last, F.T., Dighton, J. and Mason, P.A. (1987) Successions of sheathing mycorrhizal fungi. *Trends in Ecology and Evolution* **2**, 157-161.

1988

Dighton, J. (1988) Some effects of acid rain on mycorrhizas of Scots pine and potential consequences for forest nutrition. In: A. E. Jansen, J. Dighton and A. H. M. Bresser, (Eds.) *Ectomycorrhiza and Acid Rain*, pp. 104-111. Brussels: CEC Air Pollution Research Report 12]

Dighton, J. and Horrill, A.D. (1988) Radiocaesium accumulation in the mycorrhizal fungi *Lactarius rufus* and *Inocybe longicystis*, in upland Britain. *Transactions of the British Mycological Society* **91**, 335-337.

Harrison, A.F. and Dighton, J. (1988) Issue 6, NERC News, Natural Environment Research Council.

Jansen, A.E., Dighton, J. and Bresser, A.H.M. (1988) *Ectomycorrhiza and Acid Rain*, edn. Brussels: CEC Air Pollution Research Report 12.

Jones, K.C., Watts, S.A., Harrison, A.F. and Dighton, J. (1988) The distribution of metals in the forest floor of aged conifer stands at a plantation in northern England. *Environmental Pollution* **51**, 31-47.

1989

Dighton, J. and Boddy, L. (1989) Role of fungi in nitrogen, phosphorus and sulphur cycling in temperate forest ecosystems. In: L. Boddy, R. Marchant and D. J. Read, (Eds.) *Nitrogen, Phosphorus and Sulphur Cycling in Temperate Forest Ecosystems*, pp. 269-298. Cambridge: Cambridge University Press]

Dighton, J., Mason, P.A. and Harrison, A.F. (1989) Field use of ^{32}P tracer to measure phosphate uptake by birch mycorrhizas. *Agriculture, Ecosystems and the Environment* **28**, 95-99.

1990

Dighton, J., Mason, P.A. and Harrison, A.F. (1990) The use of ^{32}P tracer to measure phosphate uptake by mycorrhizas of birch in the field: a preliminary study. In: A. F. Harrison, P. Ineson and O. W. Heal, (Eds.) *Nutrient Cycling in Terrestrial Ecosystems: Field Methods, Applications and Interpretations.*, pp. 389-399. Elsevier]

Dighton, J., Mason, P.A. and Poskitt, J.M. (1990) Field use of ^{32}P tracer to measure phosphate uptake by birch mycorrhizas. *New Phytologist* **116**, 655-661.

Dighton, J. (1990) Summary Chapter: Nutrient supply to plants. In: A. F. Harrison, P. Ineson and O. W. Heal, (Eds.) *Nutrient Cycling in Terrestrial Ecosystems: Field Methods, Applications and Interpretation*, pp. 441-445. Elsevier]

Dighton, J. and Harrison, A.F. (1990) Changes in the phosphate status of Sitka spruce plantations of increasing age, as determined by root bioassay. *Forest Ecology and Management* **31**, 35-44.

Frankland, J.C., Dighton, J. and Boddy, L. (1990) Methods for studying fungi in soil and forest litter. In: R. Grigorova and J. R. Norris, (Eds.) *Methods in Microbiology* **22**, pp. 343-404.

Harrison, A.F., Dighton, J., Taylor, K., McDonald, M. and Jones, H.E. (1990) Phosphorus nutrition of trees and grasses using a root deficiency bioassay. In: A. F. Harrison, P. Ineson and O. W. Heal, (Eds.) *Nutrient Cycling in Terrestrial Ecosystems: Field Methods, Applications and Interpretation.*, pp. 373-388. Elsevier]

Harrison, A.F. and Dighton, J. (1990) Determination of phosphorus status of wheat and barley crops using a rapid root bioassay. *Journal of Science Food and Agriculture* **51**, 171-177.

Jansen, A.E. and Dighton, J. (1990) Effects of air pollutants on ectomycorrhizas. *CEC Air Pollution Research Report 30* **30**,

1991

Dighton, J., Clint, G.M. and Poskitt, J.M. (1991) Uptake and accumulation of ^{137}Cs by upland grassland soil fungi: a potential pool of Cs immobilization. *Mycological Research* **95**, 1052-1056.

Dighton, J. (1991) Acquisition of nutrients from organic resources by mycorrhizal autotrophic plants. *Experientia* **47**, 362-369.

Clint, G.M., Dighton, J. and Rees, S. (1991) Influx of ^{137}Cs into hyphae of basidiomycete fungi. *Mycological Research* **95**, 1047-1051.

Dighton, J. and Jansen, A.E. (1991) Atmospheric pollutants and ectomycorrhizas: more questions than answers? *Environmental Pollution* **73**, 179-204.

Dighton, J. and Jones, H.E. (1991) The use of roots to test N, P and K deficiencies in Eucalyptus nutrition. In: A. P. G. Shonau, (Ed.) *Intensive Forestry: The Role of Eucalypts*, pp. 635-644. IUFRO]

Dighton, J. and Jones, H.E. (1991) The use of roots to test N, P and K deficiencies in Eucalyptus Nutrition. *Suid-Afrikaanse Bosbouydskrif* **106**, 33-37.

Harrison, A.F., Taylor, K., Hatton, J.C., Dighton, J. and Howard, D.M. (1991) Potential of a root bioassay for determining P-deficiency in high altitude grassland. *Journal of Applied Ecology* **28**, 277-289.

1992

Dighton, J. and Coleman, D.C. (1992) Phosphorus relations of roots and mycorrhizas of *Rhododendron maximum* L. in the southern Appalachians, N. Carolina. *Mycorrhiza* **1**, 175-184.

Clint, G.M. and Dighton, J. (1992) Uptake and accumulation of radiocaesium by mycorrhizal and non-mycorrhizal heather plants. *New Phytologist* **122**, 555-561.

Shaw, P.J.A., Dighton, J. and Poskitt, J.M. (1992) Studies of the effects of SO_2 and O_3 on the mycorrhizae of Scots pine by observations above and below ground. In: D. J. Read, D. H. Lewis, A. Fitter and I. J. Alexander, (Eds.) *Mycorrhizas in Ecosystems*, pp. 208-213. Oxford: CAB International]

Shaw, P.J.A., Dighton, J., Poskitt, J.M. and McLeod, A.R. (1992) The effects of sulphur dioxide and ozone on the mycorrhizas of Scots pine and Norway spruce in a field fumigation system. *Mycological Research* **96**, 785-791.

1993

Dighton, J., Poskitt, J.M. and Brown, T.K. (1993) Phosphate influx into ectomycorrhizal and saprotrophic fungal hyphae in relation to phosphorus supply: a potential method for selection of efficient mycorrhizal species. *Mycological Research* **97**, 355-358.

- Dighton, J., Jones, H.E. and Poskitt, J.M. (1993) The use of nutrient bioassays to assess the response of *Eucalyptus grandis* Hill ex Maiden to fertilization. (1) Interactions between nitrogen, phosphorus and potassium in seedling nutrition. *Canadian Journal of Forestry* **23**, 1-6.
- Dighton, J. and Kooistra, M. (1993) Measurement of proliferation, biomass and contact with soil of fungal hyphae and roots. *Geoderma* **56**, 547-588.
- Harrison, A.F., Dighton, J. and Jones, H.E. (1993) Application of root bioassays to detect nutrient deficiencies in fast growing trees and agroforestry crops. In: I. R. Calder, R. L. Hall and P. G. Adlard, (Eds.) *Growth and Water Use of Forest Plantations*, pp. 160-163. New York: John Wiley]
- Jones, H.E. and Dighton, J. (1993) The use of nutrient bioassays to assess the response of *Eucalyptus grandis* Hill ex Maiden to fertilization. (2) A field experiment. *Canadian Journal of Forestry* **23**, 7-13.
- Robinson, C.H., Dighton, J. and Frankland, J.C. (1993) Resource capture by interaction by fungal colonizers of straw. *Mycological Research* **97**, 547-558.
- Robinson, C.H., Dighton, J., Frankland, J.C. and Coward, P.A. (1993) Nutrient and carbon dioxide release by interacting species of straw-decomposing fungi. *Plant and Soil* **151**, 139-142.
- Shaw, P.J.A., Dighton, J. and Poskitt, J.M. (1993) Studies on the mycorrhizal community infecting trees in the Liphook forest fumigation experiment. *Agriculture, Ecosystems and the Environment* **47**, 185-191.

1994

- Dighton, J. (1994) Analysis of micromycete communities in soil: a critique of methods. *Mycological Research* **98**, 796-798.
- Dighton, J. (1994) The influence of silviculture on soil structure, stability and nutrients. In: Niels Elers Koch, (Ed.) *The Scientific Basis for Sustainable Multiple-use Forestry in the European Community*, Brussels: CEC]
- Ritz, K., Dighton, J. and Giller, K.E. (1994) *Beyond the Biomass: Compositional and Functional Analysis of Soil Microbial Communities*, Chichester, U.K.: John Wiley & Sons.
- Robinson, C.H., Dighton, J., Frankland, J.C. and Roberts, J.D. (1994) Fungal Communities On Decaying Wheat Straw of Different resource Qualities. *Soil Biol. Biochem* **26**, 1053-1058.

1995

- Dighton, J. (1995) Nutrient cycling in different terrestrial ecosystems. *Can. J. Bot.* **73(Supp.)**; S1349-S1360.
- Coleman, D.C., Dighton, J., Ritz, K. and Giller, K.E. (1994) Perspectives on the compositional and functional analysis of soil communities. In: Ritz, K., Dighton, J. and Giller, K.E., (Eds.) *Beyond the Biomass: Compositional and Functional Analysis of Soil Microbial Communities.*, pp. 261-271. Chichester, U.K.: John Wiley & Sons]
- Gray, S. N., Dighton, J. Olsson, S. & Jennings, D. H. (1995) Real-time measurement of uptake and translocation of ¹³⁷Cs within mycelium of *Schizophyllum commune* Fr. by autoradiography followed by quantitative image analysis. *New Phytol.* **129**; 449-465.
- Harrison, A. F., Stevens, P. A., Dighton, J., Quarmby, C., Dickinson, A. L., Jones, H. E. & Howard, D. M. (1995) The critical load of nitrogen for Sitka spruce forests on stagnopodsols in Wales: role of nutrient limitations. *For. Ecol. Manage.* **76**; 139-148.
- Michelsen, A., Schmidt, I. K., Jonasson, S., Dighton, J., Jones, H. E. & Callaghan, T. V. (1995) Inhibition of growth, and effects on nutrient uptake of arctic graminoids by leaf extracts - allelopathy or resource competition between plants and microbes. *Oecologia* **103**; 407-418.
- Moody, S. A., Briones, M, J, I., Pearce, T. G. & Dighton, J. (1995) Selective consumption of decomposing wheat straw by earthworms. *Soil Biol. Biochem.* **27**; 1209-1213.
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1996

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- Dighton, J.; Tugay, T., and Zhdanova, N. N. (2008). Interactions of fungi and radionuclides in soil. In: Dion, P. and Nautiyal, C. S. (Eds). *Microbiology of Extreme Soils*. Berlin Heidelberg: Springer-Verlag; 2008; pp. 333-355.
- Dighton, J.; Tugay, T., and Zhdanova, N. N. (2008). Fungi and ionizing radiation from radionuclides. *FEMS Microbial Letters*. in press.

Papers presented:

October 1994: "Is it possible to develop microbial test systems to evaluate pollution effects on soil nutrient cycling?" Invited contribution to SERAS (Soil Ecotoxicology Risk Assessment) workshop, The Netherlands. For publication in book edited by N van Straalen.

May 1995: "Research in the New Jersey Pinelands" Invited contribution to Outer Coastal Plain/Pinelands Research Symposium, Stockton State College (published in a monograph together with group discussion comments, led by J. Dighton, edited by M B Kaplan, NJ DEP, November 1995).

September 1995: "Auswirkungen saurer Niederschläge auf Mycorrhizastruktur, Pilzbiomasse und Nematodenfauna in einem Fichtenforst" Ruess, L., Dighton, J. & Cudlin, P. to Gesellschaft für Ökologie (25th Annual Meeting of the German Ecological Society) [presented by L Ruess].

October 1995: "Role of Fungi in Nutrient Cycling in Soil" Invited paper to the Soil Science Society of America Division S-3, St Louis.

April 1996: "The importance of being a large, long-lived, fractal organism: encounters with pollutant chemicals" Invited introductory lecture Camden Chemistry Club Annual Undergraduate Research Seminar

August 1996: Co-Chaired Discussion Workshop "Saprotrophic capabilities of mycorrhizal fungi" with Dr Jacqueline Baar at 1st International Conference on Mycorrhizae, Berkeley, San Francisco.

August 1996: Poster "The influence of litter quality on mycorrhizal communities" C. Conn & J. Dighton; 1st International Conference on Mycorrhizae, Berkeley, San Francisco.

August 1996: Poster: "Ectomycorrhizae and oak seedling performance in human altered forest ecosystems" J. W. Baxter, S. T. A. Pickett, M. M. Carriero & J. Dighton; 1st International Conference on Mycorrhizae, Berkeley, San Francisco.

August 1996: "Biological indicators of soil acidification: nematodes and their interactions with fungi." L. Ruess & J. Dighton, XII International Colloquium on Soil Zoology, Dublin [presented by L. Ruess]

February 19 1997: "The importance of being a large, long-lived, fractal organism: encounters with pollutant chemicals" Invited lecture to The American Institute of Biological Sciences, Shaffrey Chapter, Saint Joseph's University, Philadelphia.

October 27 1997: "The importance of fungi in ecological processes" Rowan College undergraduate seminar.

October 31 1997: "Interactions of fungi and pollutants" Ecolunch seminar series University of Pennsylvania.

November 1997 : "Interactions of fungi and pollutants" Ecology group Dartmouth University.

February 20 1998: "Towards an understanding of the role of mycorrhizas" Joint Universities Seminar series Montreal.

March 26 1998: "The Fungal Basement" Philadelphia Botanical Club, invited lecture.

June 1998: "Short-term effects of prescribed burning on ectomycorrhizal community structure, nutrient uptake and soil water chemistry in the New Jersey Pine Barrens" A. Tuininga, D. Gray & J. Dighton. International Conference on Mycorrhizae, Uppsala, Sweden.

June 1998: Organized workshop on "Forest fire and disturbance effects on ectomycorrhizal communities. with Amy Tuininga & Keith Egger, International Conference on Mycorrhizae, Uppsala, Sweden.

June 11 1998: "Community response of phylloplane fungi to fire in the New Jersey Pine Barrens" S. S. Nix & J. Dighton: poster to Mycological Society of America Annual Meeting, Puerto Rico.

August 1998: "Nitrogen and phosphorus availability in human-altered ecosystems" J. W. Baxter, S. T. A. Pickett, J. Dighton & M. M. Carriero: paper to Ecological Society of America, Baltimore.

October 1 1998 "The role of the forest floor as a potential control of ectomycorrhizal community structure" Presented to the Swedish University of Agricultural Sciences, Uppsala, invited lecture.

October 2 1998 Invited opponent to PhD Thesis by Lena Jonsson "Community Ecology of Ectomycorrhizal Fungi in Swedish Boreal Forests". Swedish University of Agricultural Sciences, Uppsala.

March 1 1999 "What, where, when and how much: an ecologists view of chemistry and radiochemistry" to Chemistry Graduate Seminar Series, Camden

March 7 1999 "Mycorrhizae: more than making plants grow" invited lecture to NJ Mycological Society

March 11 1999 "The importance of diversity in mycorrhizae" Seminar to Microbiology class and Industrial Microbiology, University of Puerto Rico at Mayaguez.

March 25 1999 "Links between leaf litter dynamics and mycorrhizal fungal communities in the NJ pine barrens" Seminar to Ecology & Evolution Graduate School, New Brunswick.

May 23 - 26 1999 "The influence of leaf litter quality on ectomycorrhizal communities." C. Conn & J. Dighton; Soil Ecology Society conference Chicago.

May 23 - 26 1999 "The influence of ericaceous understory stems as leaf litter dams and potential consequences for soil biota." J. Dighton, A. Morale-Bonilla, R. Jimenez-Nunez & N. Martinez; Soil Ecology Society conference Chicago.

August 8-12 1999 - papers read at ESA annual meeting Spokane, WA

"Multiple ectomycorrhizal colonization affects host tree performance under low nutrient conditions" Baxter, J. W. & Dighton, J.

"Ectomycorrhizal taxonomic methods and their role in the understanding of mycorrhizal function." Dighton, J., Tuininga, A. R. & Jonsson, L.

"Effect of fire intensity and time since burn on below-ground nutrient dynamics in the New Jersey Pine Barrens" Tuininga, A. R., Gray, D. M. & Dighton, J.

"Short-term and long-term effects of fire frequency on below-ground nutrient dynamics in the New Jersey Pine Barrens." Gray, D. M., Tuininga, A. R. & Dighton, J.

July 12 2000 – 'Capachino Academy' RU Camden lecture at Barnes & Noble (Marleton) 'The New Jersey Pine Barrens: the Need for Basic Research'.

Nov. 30 2000 - Seminar to Biology Department, Villanova University: 'Effects of forest floor heterogeneity on the structure and function of ectomycorrhizal communities'.

September 2000 - 'Leaf litter controls of ectomycorrhizal community structure and function: an application to sustainable forestry.' International Meeting on The Role of Soils in Forest Sustainability, Vila Real, Portugal, with Jim Baxter & Christine Conn.

September 2000 – 'Soil Ecology': invited seminar as part of a USA delegation to Kiev, Ukraine to participate in a workshop 'New Approaches to Understanding the Ecology of Urban Plant Communities. Kiev, Sept. 11-18.

August 2001 – Presentations to the Ecological Society of America annual meeting:

Baxter, J. W. & Dighton, J. 'Does ectomycorrhizal diversity matter? Evidence from pitch pine grown under inorganic and organic phosphorus conditions.' (paper)

Gray, D. M. & Dighton, J. 'The fate of nutrients released by control burning and the effect on pine seedling growth.' (paper).

Dighton, J., Arbuckle-Keil, G. & Mascarenhas, M. M. 'Micro-scale changes in leaf litter surface carbohydrate chemistry during decomposition.' (poster).

Jonsson, L., Dighton, J., Lussenhop, J. & Koide, R. 'Edaphic and biotic controls of ectomycorrhizal species diversity. (poster).

Aug 2002

Pinelands Summer School – present a lecture on soils to teachers attending this course run by the Pinelands Preservation Alliance

August 2003

Dighton, J., Tugay, T., Zhdanova, N. N., Zheltonozhsky, V. & McDermott, P. ‘The influence of ionizing radiation on directional growth of emergent hyphae from conidiophores’ MSA/BMS Asilomar, California (paper)

Baxter, J. W. & Dighton, J. ‘Linking ectomycorrhizal diversity to host plant performance’ ICOM4, Montreal Canada (paper)

Jonsson, L., Dighton, J., Lussenhop, J. & Koide, R. ‘Effects of ground leaf litter from various plant species on ectomycorrhizal fungal communities of *Pinus rigida* seedlings. ICOM4, Montreal Canada (poster)

Tuininga, A. R., Dighton, J., Huskins, R., Gray, D. M. & Belton, T. ‘Nitrogen deposition effects on mycorrhizal communities in the New Jersey Pine Barrens’. ICOM4, Montreal Canada (poster).

Tugay, T. I., Zhdanova, N. N., Redchits, T. I., Zheltonozhsky, V. A., Sadovnikov, L. V. & Dighton, J. ‘Response reactions of some micromycetes to the influence of low doses of radioactivity’ XIV Congress of European Mycologists, Ukraine, (poster).

Zhdanova, N. N., Redchits, T. I., Tugay, T. I., Zheltonozhsky, V. A., Sadovnikov, L. V. & Dighton, J. ‘Biological activity of fungi isolated from localities of high radioactive pollution’ XIV Congress of European Mycologists, Ukraine, (paper).

Pinelands Summer School – present a lecture on soils ‘Soils: the foundation of terrestrial ecosystems’ and conducted a field trip for teachers attending this course run by the Pinelands Preservation Alliance

Barrens to the Beaches – conducted a half day of activities for high school students and teachers on the changes in water from rainfall through forest canopy and soil into streams in the pine barrens of NJ – part of a course organized by the Pinelands Preservation Alliance.

Invited lecture in closing session of the NJ Governor’s School on Ecology and the Environment ‘Scientific research: Hypothesis, speculation and chance’.

October 3 2003: 2003 Pine Barrens Research Forum – lecture ‘Recovery Patterns of Ectomycorrhizal Diversity and Function Following Fire’ Tuininga, A. R., Dighton, J. & Gray, D. M. – Brookhaven National Laboratory, Upton, NY

November 20 2003 The Restoration of Urban/Suburban Green Space: Past, Present and Future: A Practical Approach. Dighton, J. ‘Soil: its intricacies and implications in restoration.’ invited paper, The Schuylkill Center, Pennsylvania.

August 2004

Mycological Society of America

Nitrogen deposition effects on pine ectomycorrhizal fungal communities identifying potential indicator species. Tuininga, A. R., Huskins, R. E., Dighton, J., Gray, D. M. & Belton, T. (poster).

Ecological Society of America

Impacts of atmospheric deposition on New Jersey pine barrens forest soils and ectomycorrhizal communities.

Dighton, J., Tuininga, A. R., Gray, D., Huskins, R. E. & Belton, T. (oral)

Nitrogen deposition effects on ectomycorrhizal communities: A comparison between two soil types. Huskins, R. E., Tuininga, A. R., Dighton, J., Gray, D. M., Belton, T. (oral)

Elevated nitrogen effects on oak mycorrhizae. Tuininga, A. R., Archibald, J., Van Horn, M. M., Huskins, R. E., Dighton, J., Belton, T. (oral)

Response of *Pinus rigida* to an experimental ectomycorrhizal diversity gradient in unsterilized soils. Baxter, J. W., Dighton, J. (oral).

Ericaceous control of phosphorus availability following fire: interactions between ectomycorrhizal pitch pine (*Pinus rigida*) and ericoid mycorrhizal blueberry plants (*Vaccinium angustifolium*). Mullin, B. C., Tuininga, A. R., Dighton, J., Van Horn, M. M., Huskins, R. E., Vargas, A. M. (poster).

September 2004

British Mycological Society

Impacts of Atmospheric N Deposition on Communities of Ectomycorrhizae in Oligotrophic New Jersey Pine Barrens Forest Soils. John Dighton, Amy Tuininga, Dennis Gray, Rebecca E. Huskins and Thomas Belton (poster)

Interactions Between Fungal Communities on Cranberry Leaf Surfaces. Shannon Stohr and John Dighton (poster)

Ionizing Radiation Influences Spore Germination and Directionality of Growth of Emerging Hyphae. John Dighton, Tatyana Tugay, Nelli Zhdanova, Victor Zheltonozhsky & Patrick McDermott (oral presentation).

October 2004

N.E. and Midlantic AMERIFLUX meetings

Carbon cycling research in the pine barrens of New Jersey. Clark, K. L., Hom, J., Skowronski, N., Wyckoff, T., Dighton, J., Xu, M., Hammerlynk, E., Gray, D. & Brickner, D. (poster)

COST Action workshop, Woody Root Processes under a Changing Environment. Thessaloniki Greece (Oct 27-30)

Functional role of roots in response to environmental factors. Dighton, J. (invited keynote oral paper).

2005

March 5: 16th Annual Pinelands Short Course (BCC) tour of Pinelands Field Station ‘Research at the Silas Little Research Station’ (25 students)

March 9: Burlington County Natural Sciences Club. Talk on soil ecology.

May 22-25: Soil Ecology Society – Brickner, D., Dighton, J & Gray, D. M. Prescribed fire effects and belowground carbon storage in a New Jersey pine barrens pine-oak forest. (oral presentation by Brickner).

May 22-25: Soil Ecology Society – Gray, D. M. & Dighton, J. Mineralization of forest litter nutrients by combustion.

June 25: ‘Fungi in Ecosystem Processes’ invited talk to New Jersey Mycological Society

July 12: Pinelands Soil – talk to the Pinelands Preservation Alliance 6th Annual Pinelands Summer Teacher Institute – follow-up field excursion.

Sept British Mycological Society Annual Meeting – Poster ‘Effects of mercury on ectomycorrhizal fungi’ Hicks-Crane, S., Dighton, J. & Barkay, T.

Oct 28 Davefest – soil ecology meeting Athens GA. ‘Leaf litter composition influences ectomycorrhizal fungal and soil faunal communities’. Dighton, John, Jonsson, Lena, Lussenhop, John, and Koide, Roger, Oral presentation

Dec 1 Rotary ‘Rutgers Pinelands Field Station: Its Mission and Research’

Characterization of Leaf Litter from the New Jersey Pinelands before and after Managed Burns using FT-IR and TGA-IR, Kristin Lammers, J. Dighton and G. A. Arbuckle-Keil, Eastern Analytical Symposium, Somerset, NJ, November 14 – 17, 2005.

2006

NJ Mycological Society ‘ The Role of Fungi in Soil Processes’ – January 8 2006

NASA Space Life Sciences Lab, Kennedy Space Center, Florida ‘ Fungi and Pollution: Case Studies in Nitrogen Deposition and Radionuclide Pollution’ – January 12 2006

Characterization of Leaf Litter from the New Jersey Pinelands using FT-IR, Kristin Lammers, G. A. Arbuckle-Keil, and J. Dighton, The Sixth Annual Graduate Student Poster Session, Philadelphia Section American Chemical Society, Villanova Conference Center, Villanova, PA, January 19, 2006.

FT-IR Analysis of the Chemical Composition and Thermal Decomposition of Leaf Litter from the New Jersey Pinelands, G. A. Arbuckle-Keil, K. Lammers, J. Dighton, 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006.

Radionuclides and fungi: Fungal behavior, fungal communities and impacts on radionuclide mobility in soil. World Congress on Soil Science, June 2006 (invited poster)

Thermal and Infrared Analysis of Leaf Litter from the New Jersey Pinelands before and after Managed Burns, K. Lammers, G. Arbuckle-Keil, J. Dighton, 38th Middle Atlantic Regional Meeting (MARM), Hershey, PA, June 4 – 7, 2006.

Harvard Invited Seminar ‘ Fungi and Pollution: Case Studies in Nitrogen Deposition and Radionuclide Pollution’ – March 14 2006

Drexel University Invited Seminar ‘ Fungi and Pollution: Case Studies in Nitrogen Deposition and Radionuclide Pollution’ – April 20 2006

British Mycological Society Annual Meeting, Birmingham, UK – Poster- Growth responses to and accumulation of mercury by ectomycorrhizal fungi. Sharron Crane, John Dighton & Tamar Barkay. September 3-7 2006

Finnish Forest Research Institute, Helsinki – invited seminar: Post Harvest Residue Management: A Forestry Dilemma. J. Dighton (Invited) September 15 2006

ACS Chicago Elucidating the emission of chemical compounds from terrestrial fungal-fungal interactions through chromatographic techniques. Alice Chin, Dr. Georgia Arbuckle-Keil, Dr. John Dighton, Dr. Cesar Rodriguez-Saona (poster)

2007

XV Congress of European Mycologists, St Petersburg, Russia Sept 16-20

Fungal succession on and decomposition of gypsy moth frass. J. Dighton, J. Adams Krumins & D. M. Gray (oral presentation)

Results of 20 years monitoring of soil mycobiota within the 10-km alienation zone of the Chernobyl Nuclear Power Plant. N. N. Zhdanova, A. I. Vasilivskaya, T. I Tugay, L. V. Artyskova, L. T. Nakonechnaya & J. Dighton (oral presentation)

An applied model for macro-fungi conservation: fungal management in U.S. National Parks. E. S. Barron & J. Dighton (oral presentation)

Biological activity of the microscopic fungi isolated from the 10-km alienation zone of the Chernobyl Nuclear Power Plant. J. Dighton, T. I. Tugay, N. N. Zhdanova, A. I. Vasilivskaya, V. A. Zheltonozhsky (poster presentation)

Dynamics and structure of the phylloplane fungal community of *Vaccinium macrocarpon* (American cranberry) under different agricultural management regimes. S. S. Nix & J. Dighton (poster presentation).

South Jersey Nursery Meeting: Nov 13 2007 'Mycorrhizae and their function' Rutgers NJAES