

Examples of Author Contributions

Mann, T.A., **R.D. Yanai**, T. J. Fahey, A.B. Reinmann. Nitrogen and phosphorus addition affect soil respiration in northern hardwood forests. *Ecosystems*

TJF designed the soil respiration study and oversaw data collection from 2008 to present. TAM collected the most recent 2 years of data and analyzed the full time series, with input from ABR, who also analyzed the root biomass data. The manuscript was drafted by TAM and improved by RDY and TJF, with input from ABR. RDY herded cats in the overall MELNHE study, which was the brainchild of TJF.

Yanai, R.D., A.R. Young, J.L. Campbell, J.A. Westfall, C.J. Barnett, G.A. Dillon, M.B. Green, and C.W. Woodall. 2023. Measurement error in a national forest inventory: results from the Northern Region of the USA. *Canadian Journal of Forest Research*, 53(3): 163-177

RDY, JLC, ARY, and MBG designed the study. CJB generated the raw comparisons and ARY wrangled them, with input from all the authors over the course of several years, beginning with GAD and continuing with RDY, JLC, and CWW. GAD wrote the first draft of the manuscript, CWW kicked it into high gear, and JAW was called in to help with interpretation. The final draft was written mainly by RDY, JLC, and JAW, with frequent calls to ARY and CJB to refine the analyses.

Young, A.R., R. Minocha, S. Long, J. E. Drake, and R.D. Yanai. 2023. Responses of physical, chemical, and metabolic leaf characteristics to depth within mature sugar maple crowns and to nitrogen and phosphorus addition. *Tree Physiology*, tpad043. [Canadian Journal of Forest Research](#)

ARY and RDY planned and designed the research. ARY climbed the trees and collected the leaves. ARY analyzed leaf physical and chemical characteristics; RM and SL analyzed leaf metabolic characteristics. ARY, RDY, and JED analyzed the data. All the authors engaged in interpreting the results and learned a lot from one another. ARY and RDY led the writing of the manuscript with input from RM.

Lin, J., J.G.P. Gamarra, J.E. Drake, A. Cuchiatti, and R.D. Yanai. 2023. Scaling up uncertainties in allometric models: How to see the forest, not the trees. *Forest Ecology Management*, 537: 120943. [Canadian Journal of Forest Research Article link](#)

Jian Lin: Conceptualization, Methodology, Formal analysis, Writing – original draft, Visualization. Javier G.P. Gamarra: Conceptualization, Methodology, Formal analysis, Writing – original draft. John E. Drake: Conceptualization, Writing – original draft, Visualization. Anibal Cuchiatti: Resources, Writing – review & editing. Ruth D. Yanai: Conceptualization, Methodology, Resources, Writing – original draft, Supervision.

Gonzales, K.E., R.D. Yanai, T.J. Fahey, and M.C. Fisk. 2023. Evidence for P limitation in eight northern hardwood stands: Foliar concentrations and resorption by three tree species in a factorial N by P addition experiment. *Forest Ecology Management*, 529: 120696

Kara E. Gonzales: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Visualization. Ruth D. Yanai: Conceptualization, Methodology, Writing – original draft, Writing – review & editing, Project administration, Funding acquisition. Timothy J. Fahey: Conceptualization, Methodology, Writing – review & editing, Funding acquisition. Melany C. Fisk: Conceptualization, Methodology, Investigation, Writing – review & editing, Funding acquisition

Rice, A.M., Johnston, M.T., Libenson, A.J., and Yanai, R.D. 2022. Tree variability limits the detection of nutrient treatment effects on sap flux density in a northern hardwood forest. *PeerJ*, 10:e14410

Alexandrea M. Rice performed the experiments, analyzed the data, prepared figures and/or tables, authored or reviewed drafts of the article, and approved the final draft.

Mariann T. Garrison-Johnston conceived and designed the experiments, authored or reviewed drafts of the article, and approved the final draft.

Arianna J. Libenson performed the experiments, analyzed the data, authored or reviewed drafts of the article, and approved the final draft.

Ruth D. Yanai conceived and designed the experiments, authored or reviewed drafts of the article, and approved the final draft.

Hong D.S., K.E. Gonzales, T.J. Fahey, and R.D. Yanai. 2022. Foliar nutrient concentrations of six northern hardwood species responded to nitrogen and phosphorus fertilization but did not predict tree growth. *PeerJ*, 10:e13193

Daniel S. Hong conceived and designed the experiments, performed the experiments, analyzed the data, prepared figures and/or tables, authored or reviewed drafts of the paper, and approved the final draft. Kara E. Gonzales conceived and designed the experiments, performed experiments, analyzed the data, authored or reviewed drafts of the paper, and approved the final draft. Timothy J. Fahey and Ruth D. Yanai conceived and designed the experiments, authored or reviewed drafts of the paper, and approved the final draft.

Nash, J.M., F.M. Diggs, and R.D. Yanai. 2022. Length and colonization rates of roots associated with arbuscular or ectomycorrhizal fungi decline differentially with depth in two northern hardwood forests. *Mycorrhiza*, 32:213-219.

Author contribution RDY designed the study and obtained the funding. FMD analyzed the samples. JMN analyzed the data and made the figures. FMD drafted the first report, and JMN picked it up again, years later, under the direction of RDY.

Shan, S., H. Devens, T.J. Fahey, R.D. Yanai, and M.C. Fisk. 2022. Fine root growth increases in response to nitrogen addition in phosphorus-limited northern hardwood forests. *Ecosystems*

Author's Contribution: MCF, RDY, TJJ, and SS designed the study. SS, HD, MCF, and TJJ collected the data. SS performed analyses and drafted the manuscript, and MCF, RDY, and TJJ contributed substantially to writing and revisions.

See, C.R., M.B. Green, R.D. Yanai, A.S. Bailey, J.L. Campbell, and J. Hayward. 2020. Quantifying uncertainty in annual runoff due to missing data. *PeerJ*

Author Contributions

Craig R. See and Mark B. Green conceived and designed the experiments, performed the experiments, analyzed the data, prepared figures and/or tables, authored or reviewed drafts of the paper, and approved the final draft.

Ruth D. Yanai and John L. Campbell conceived and designed the experiments, authored or reviewed drafts of the paper, and approved the final draft.

Amey S. Bailey performed the experiments, analyzed the data, authored or reviewed drafts of the paper, and approved the final draft.

Jeremy Hayward performed the experiments, authored or reviewed drafts of the paper, and approved the final draft.

Yanai, R.D., J.J. Battles, A.D. Richardson, E.B. Rastetter, D.M. Wood, and C. Blodgett. 2010. Estimating uncertainty in ecosystem budget calculations. *Ecosystems* 13(2): 239-248.

RDY initiated this effort with no skill or insight beyond the conviction that it should be done. EBR suggested the use of Excel and clarified the mathematical notation. DMW and CAB programmed the spreadsheets. ADR verified the uncertainty in the allometric equations by resampling Whittaker's data. RDY placed the conference calls to JJB and ADR and led the writing of the article with major contributions from JJB.