學者簡歷

學者：Fikret Isik

學歷：

博士-Akdeniz University, Turkey

碩士-Istanbul University, Turkey

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經歷：

- 2014年-迄今 美國北卡羅萊納州立大學森林暨環境資源學系教授
- 2011年-迄今 美國北卡羅萊納州立大學林木改良中心副主任
  北卡州大林木改良中心(NCSU Cooperative Tree Improvement Program)創始於1950年中期，由產學合作建立至今成果豐碩，尤其是美國南方松（*Pinus taeda*）的遺傳改良可謂林木育種之典範，為世界公認的頂尖林木育種改良研究中心。
- 2009-2014 美國北卡羅萊納州立大學森林暨環境資源學系副教授
- 2004-2009 美國北卡羅萊納州立大學森林暨環境資源學系助理教授
- 2000-2004 美國北卡羅萊納州立大學森林暨環境資源學系訪問學者
- 1995-1999 土耳其林業部研究學者

Isik教授研究領域為林木基因體及計量遺傳，致力於林木分子育種的研究與應用。近年來鑽研基因組選擇（Genomic Selection）於林木育種的應用，研究樹種包含針葉樹及闊葉樹種，研究結果發表於多篇重要期刊及教科書中，成果豐碩，是同時兼具學術研究及應用的林木育種專家。

Isik 教授近10年來之Key Research Projects：

- Genomic Selection in Forest Trees: Beyond Proof of Concept. USDA-NIFA. 2019-2024 ($500,000). Principal investigator (PI).

- Towards Genomic Breeding in Forest Trees. USDA-NIFA. 2015-2019, ($370,000). PI.
- NC Department of Agriculture, Loblolly Pine Bio-mass Cropping Study, 2015-2016, ($40,513), Co-PI.
- Modeling of Cellulose, Hemicellulose and Lignin-Carbohydrate Complex Formation and Regulation to Understand Plant Cell Wall Structure. DoE. 2011-2016, ($2,249,825). Co-PI.
- Integrating Research, Education, and Extension for Enhancing Southern Pine Climate Change Mitigation and Adaptation. USDA-NIFA. 2011-2016, ($3,668,967). Co-PI.
- Southeast Partnership for Integrated Biomass Supply Systems. USDA. 2011-2016, ($3,940,212). Co-PI.
- Regulation and Modeling of Lignin Biosynthesis. NSF Plant Genome. 2009-2015, ($3,722,841). Co-PI.

Isik 教授最近5年內之著作

Textbook

Fikret Isik, James Holland, Christian Maltecca (2017). Genetic Data Analysis for Breeding. Springer series. 1st Edition, p 400, Springer International Publishing.

Book Chapters

1. Isik, F., Kumar, S., Martínez-García, P. J., Iwata, H., & Yamamoto, T. (2015). Chapter Three-Acceleration of Forest and Fruit Tree Domestication by Genomic Selection. Advances in Botanical Research, 74, 93-124.
2. Yousry A. El-Kassaby, Fikret Isik & Ross W. Whetten (2014) Modern Advances in Tree Breeding, pp 441-459. Editor: Trevor Fenning (Ed.) Challenges and opportunities for the World's Forests in the 21st Century. Springer Series: Forestry Sciences, Vol 81. 838p.

Manuscripts

Manuscripts published during the **last 3 years are listed**. The complete list can be viewed here. * Graduate student is the lead author.

1. **F Isik**, SE McKeand (2019). Fourth cycle breeding and testing strategy for Pinus taeda in the NC State University Cooperative Tree Improvement Program. Tree Genetics & Genomes. 2019 Oct 1;15(5):70.
2. *Walker TD, **Isik F**, McKeand SE (2019). Genetic Variation in Acoustic Time of Flight and Drill Resistance of Juvenile Wood in a Large Loblolly Pine Breeding Population. Forest Science. https://doi.org/10.1093/forsci/fxz002.
3. Chan JM, **Isik F** (2019). Genetic variation in resistance to Uromycladium acaciae fungus, growth, gummosis, and stem form in Acacia mearnsii populations. Tree Genetics & Genomes, 15,35.
4. *Calleja-Rodriguez A, Pan J, Funda T, Chen ZQ, Baison J **, Isik F**, ... & Wu, H. X. (2019). Genomic prediction accuracies and abilities for growth and wood quality traits of Scots pine, using genotyping-by-sequencing (GBS) data. bioRxiv, 2019, Jan:1607648.
5. *Shalizi MN, & **Isik F** (2019). Genetic parameter estimates and GxE interaction in a large cloned population of Pinus taeda L. Tree Genetics & Genomes, 15(3), 46.
6. *Jack P. Wang, et al. Improving wood properties for wood utilization through multi-omics integration in lignin Biosynthesis. Nature Communications, volume 9, Article number: 1579 (2018). doi:10.1038/s41467-018-03863-z.
7. Grattapaglia, Dario, Orzenil B. Silva-Junior, Rafael Tassinari Resende, Eduardo Pablo Cappa, Barbara Salomão de Faria Müller, Biyue Tan, Blaise Ratcliffe, **Fikret Isik**, and Yousry A. El-Kassaby. Quantitative genetics and genomics converge to accelerate forest tree breeding. Frontiers in Plant Science 9 (2018): 1693.

8. *Spitzer, J., **Isik, F**., Whetten, R. W., Farjat, A. E., & McKeand, S. E. (2017). Correspondence of loblolly pine response for fusiform rust disease from local and wide-ranging tests in the Southern United States. Forest Science, 63(5), 496-503.
9. Duran, R., **Isik, F**., Zapata-Valenzuela, J., Balocchi, C., & Valenzuela, S. (2017). Genomic predictions of breeding values in a cloned Eucalyptus globulus population in Chile. Tree Genetics & Genomes, 13(4).
10. *Farjat, A., Reich, B. J., Guinness, J., Whetten, R., McKeand, S., & **Isik**, **F**. (2017). Optimal seed deployment under climate change using spatial models: Application to loblolly pine in the Southeastern US. Journal of the American Statistical Association, 112(519), 909-920.
11. *Farjat, Alfredo E., Aaron K. Chamblee, **Fikret Isik**, Ross W. Whetten, and Steve E. McKeand (2017). Variation among Loblolly Pine Seed Sources across Diverse Environments in the Southeastern United States. Forest Science 63(1), 39-48.
12. *Kurt, Y., J. Frampton, **F. Isik**, C. Landgren and G. Chastagner. (2016). Variation in needle and cone characteristics and seed germination ability of Abies bornuelleriana and Abies equi-trojani populations from Turkey. Turkish J of Agriculture and Forestry. 40:169-176.
13. *Wang, Jack P., Sermsawat Tunlaya-Anukit, Rui Shi, Ting-Feng Yeh, Ling Chuang, **Fikret Isik**, Chenmin Yang et al. (2016). A Proteomic-based quantitative analysis of the relationship between monolignol biosynthetic protein abundance and lignin content using transgenic populus trichocarpa. Recent Advances in Ploy phenol Research 5:89
14. **Isik, Fikret**, Jérôme Bartholomé, Alfredo Farjat, Emilie Chancerel, Annie Raffin, Leopoldo Sanchez, Christophe Plomion, Laurent Bouffier (2016). Genomic selection in maritime pine. Plant Science, 242:108-119.
15. *Gräns, Daniel, **Fikret Isik**, Robert C. Purnell, and Steven E. McKeand (2016). "Genetic Variation in Response to Herbicide and Fertilization

Treatments for Growth and Form Traits in Loblolly Pine." Forest Science 62 (6): 633-640.

16. Bartholomé, Jérôme, Joost Van Heerwaarden, **Fikret Isik**, Christophe Boury, Marjorie Vidal, Christophe Plomion, and Laurent Bouffier. (2016). Performance of genomic prediction within and across generations in maritime pine. BMC genomics 17(1): 604.
17. Bartholomé, Jérôme, Marco CAM Bink, Joost van Heerwaarden, Emilie Chancerel, Christophe Boury, Isabelle Lesur, **Fikret Isik**, Laurent Bouffier, and Christophe Plomion (2016). Linkage and Association Mapping for Two Major Traits Used in the Maritime Pine Breeding Program: Height Growth and Stem Straightness. PLoS One 11(11): e0165323.
18. *Xiong, J., S.E. McKeand, **F. Isik**, Jill Wegrzyn, D.B. Neale, Z-B Zeng, L. da Costa e Silva, and R.W. Whetten (2016). Quantitative trait loci influencing stem defects in an outbred pedigree of loblolly pine. BMC Genetics 17:138. DOI 10.1186/s12863-016-0446-6