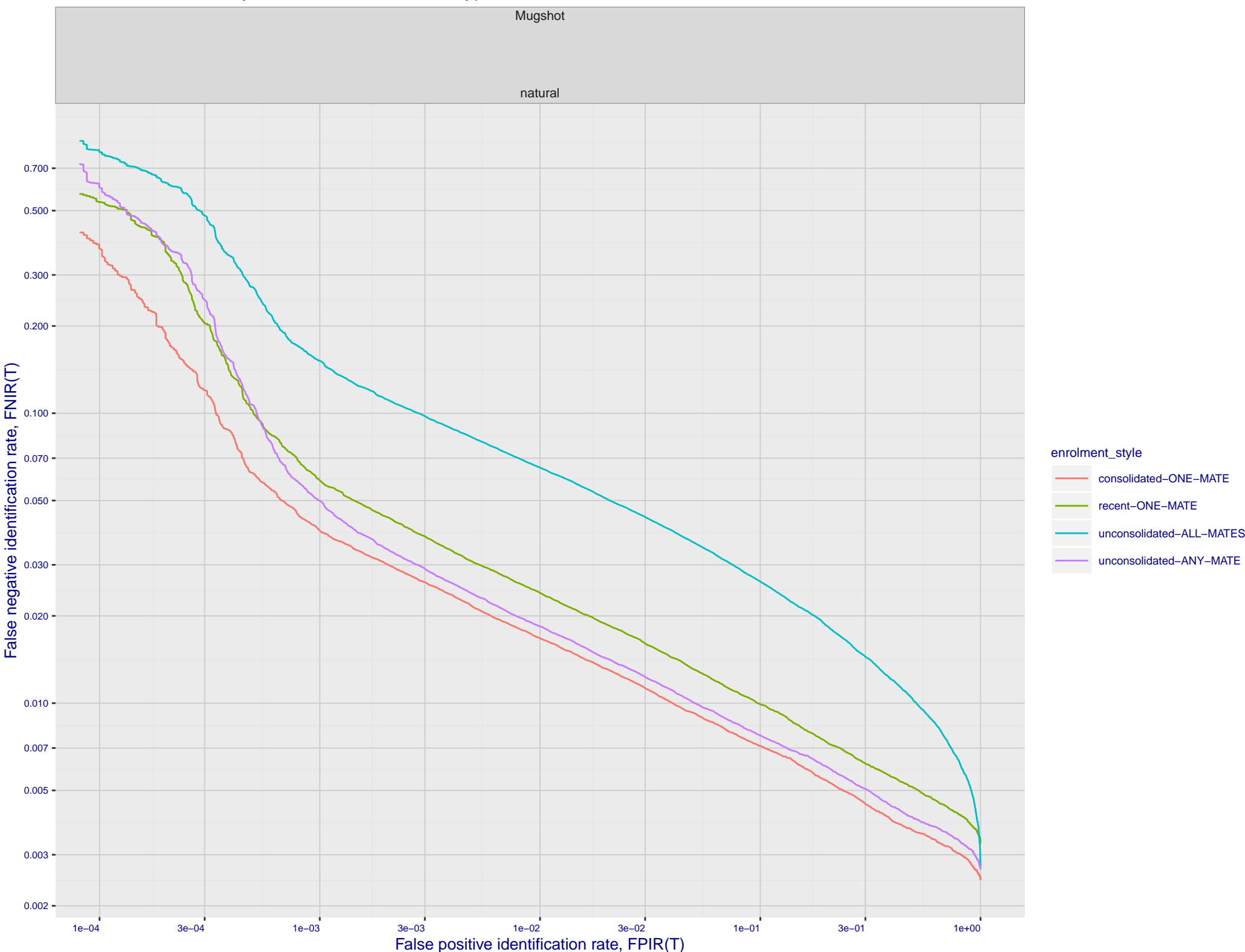
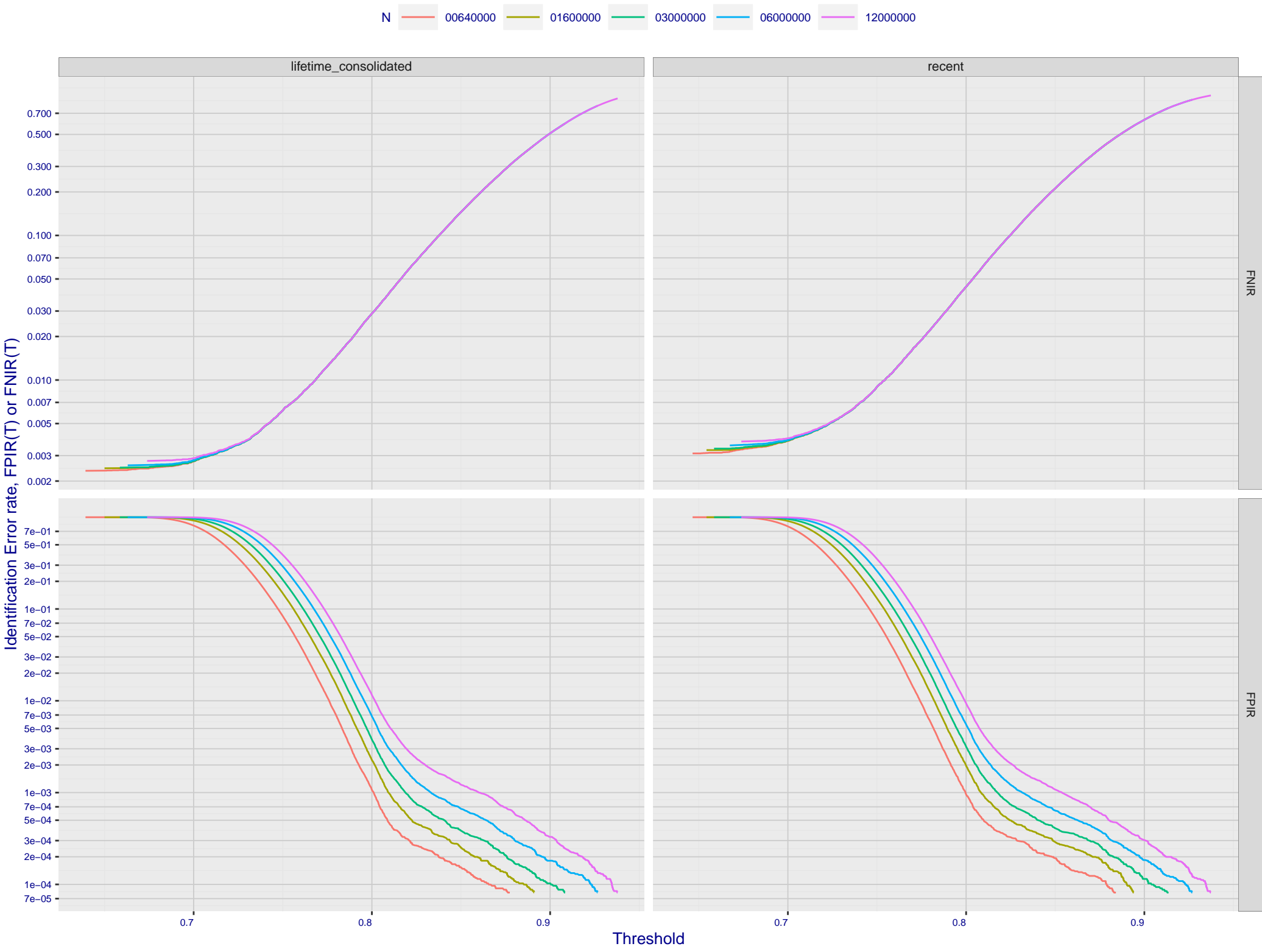


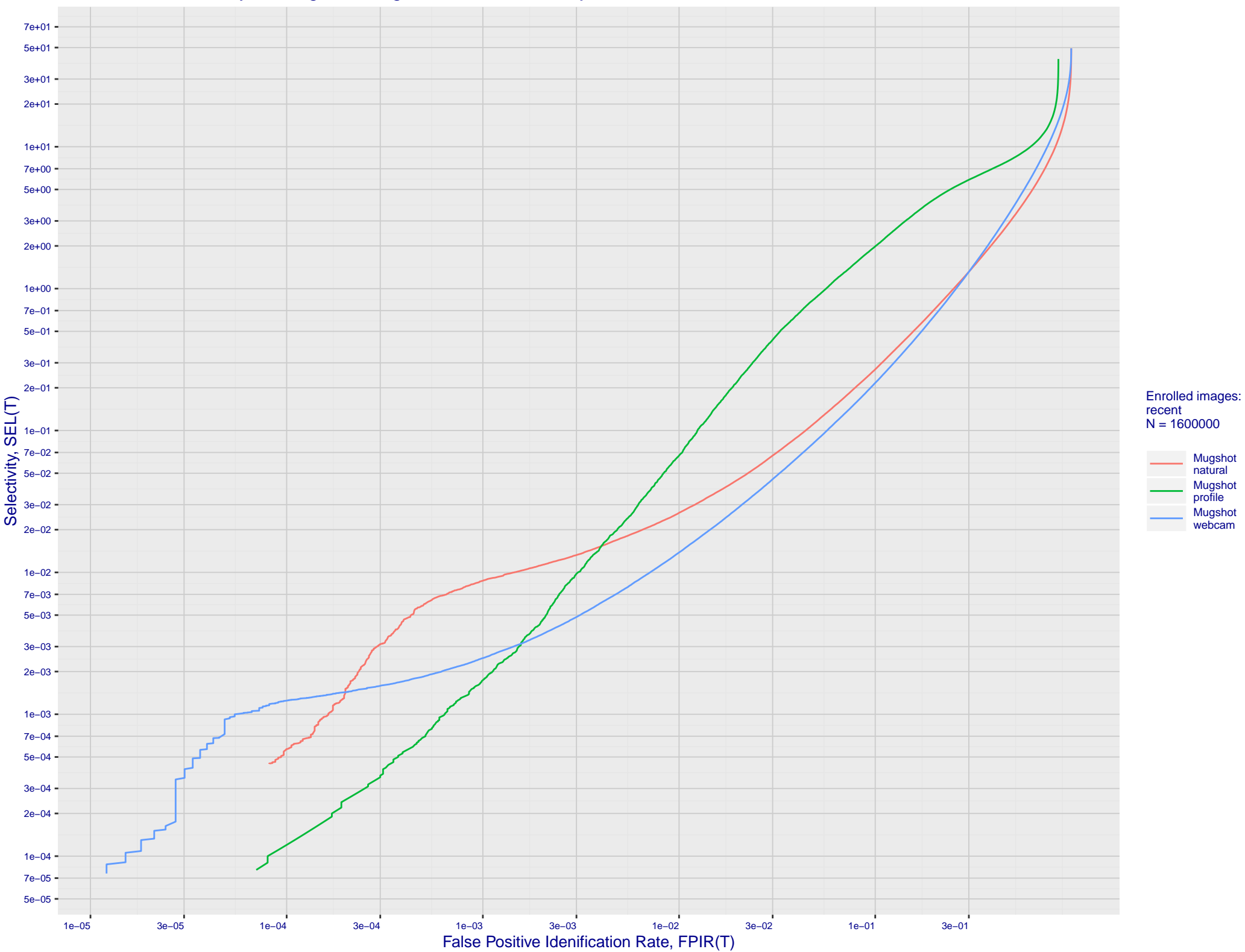
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals



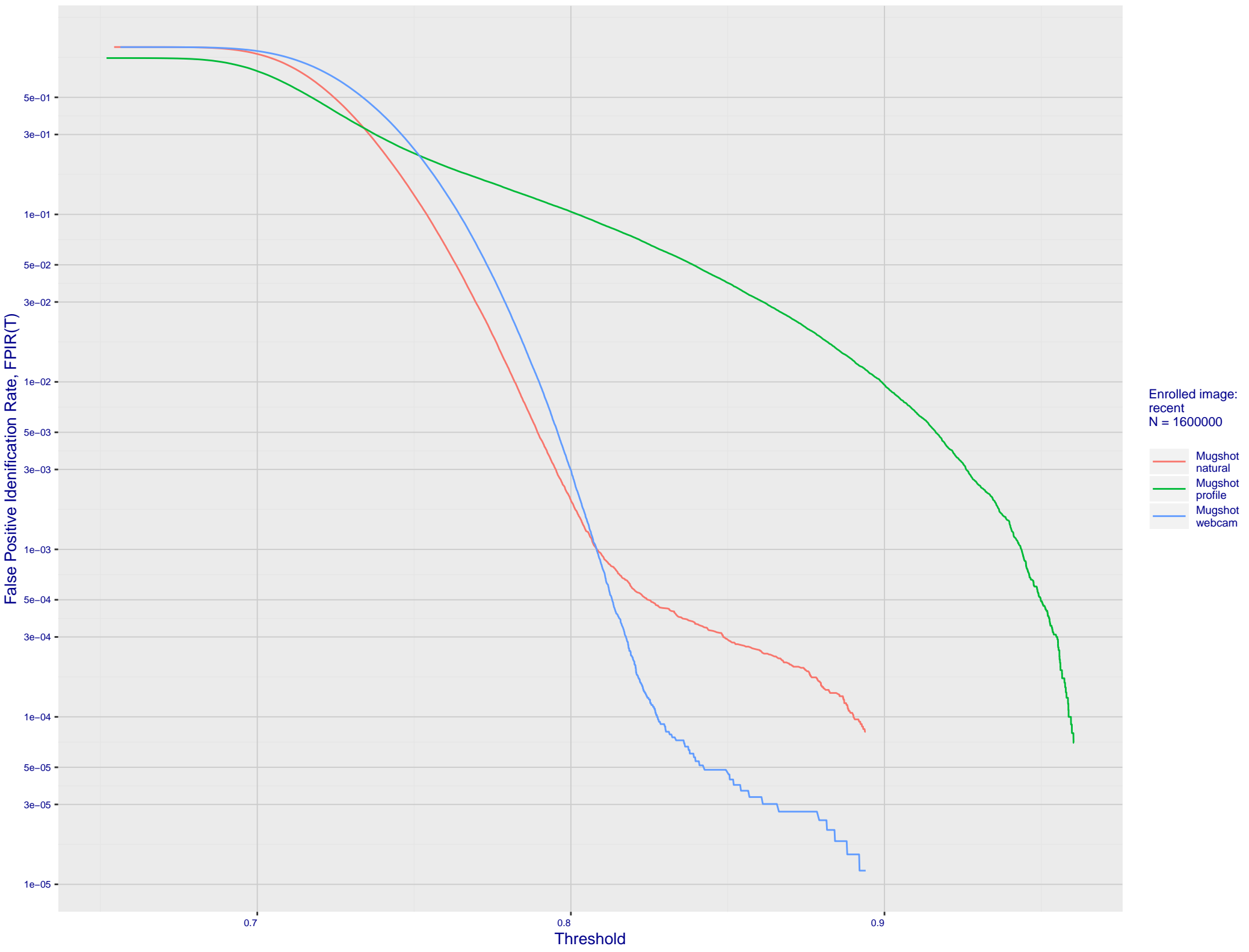
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



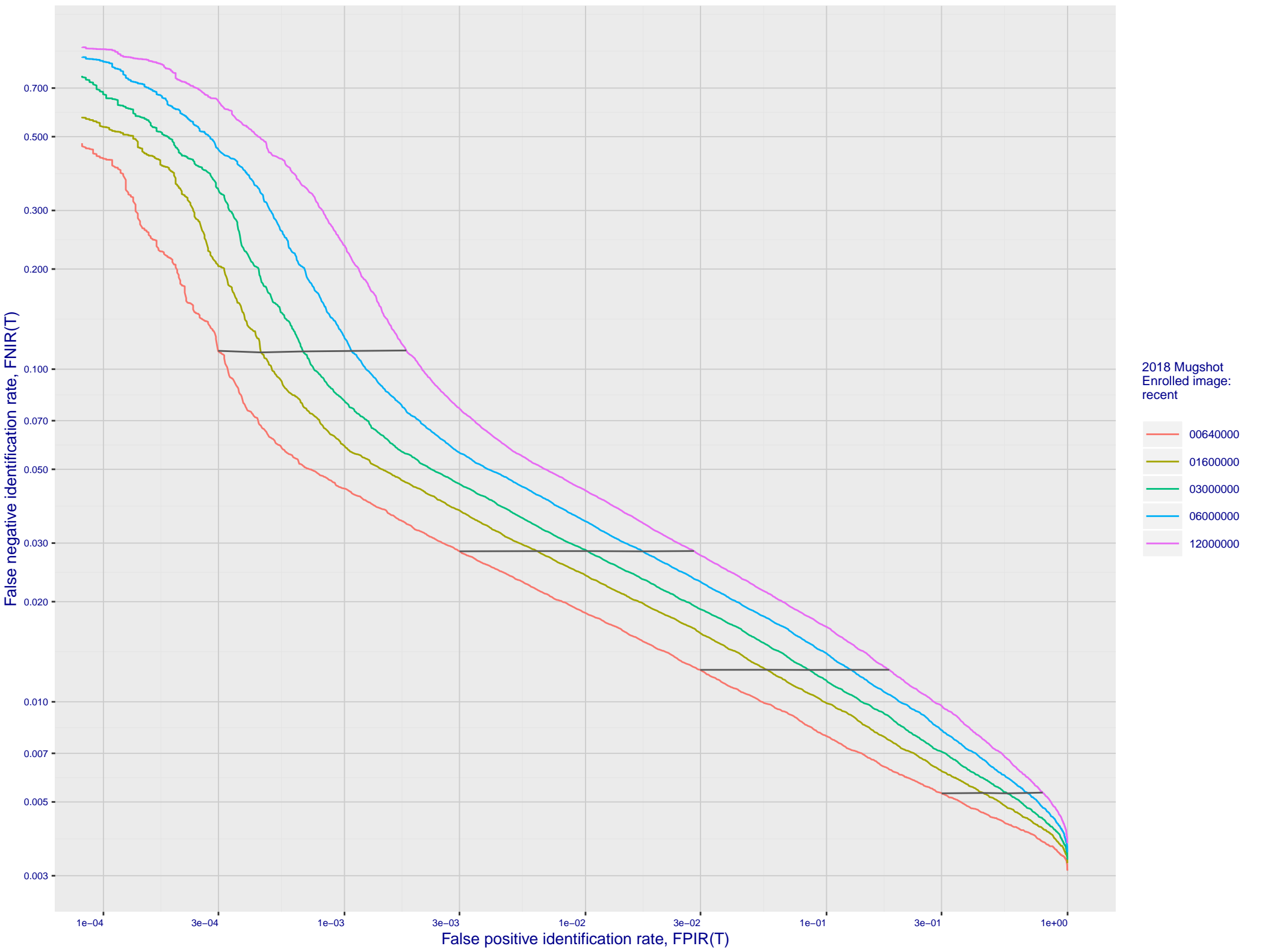
C: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate



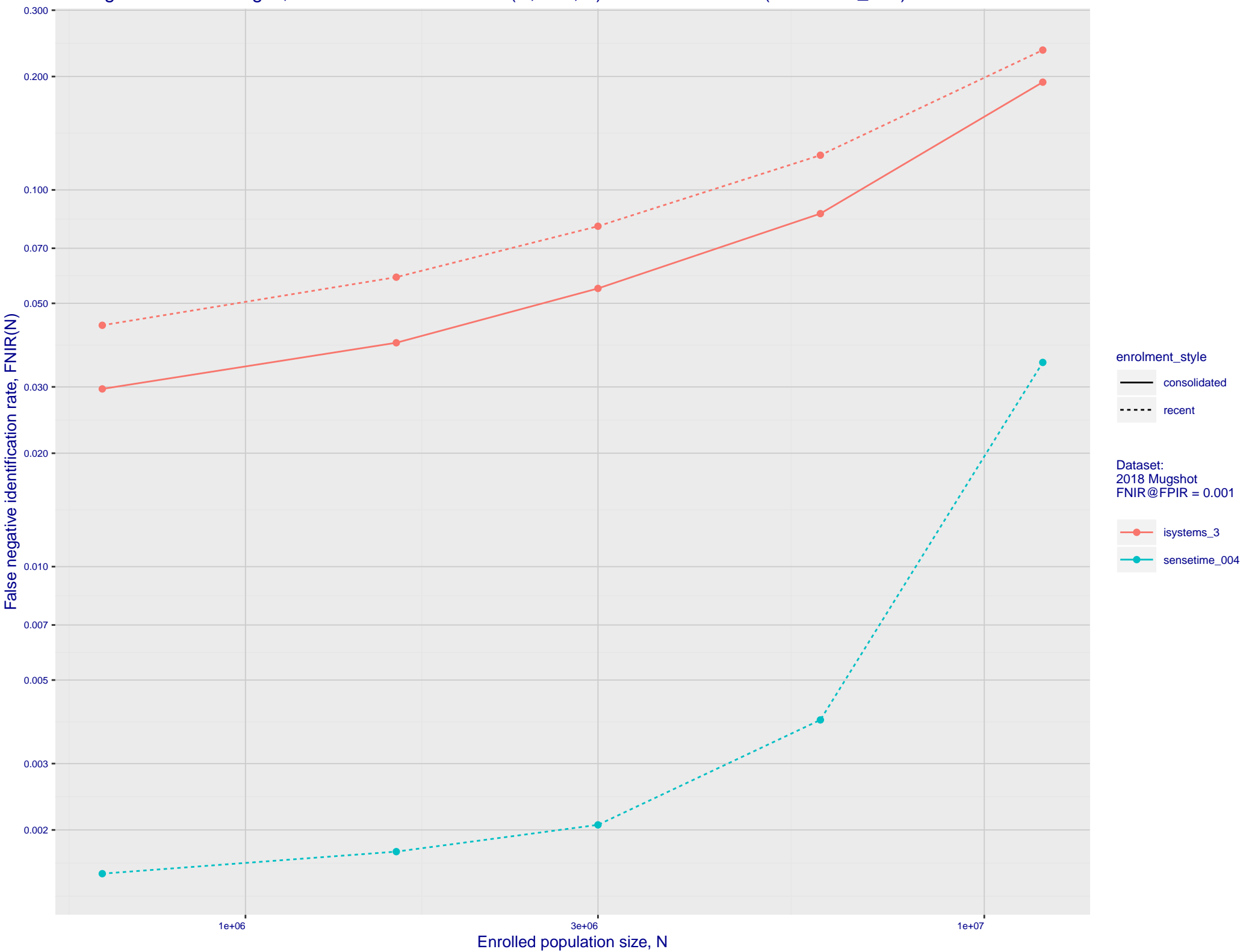
D: FPIR dependence on T by probe type for N = 1600000 subjects



E: DET for Mugshot natural images and various N. Links connect points of equal threshold.



F: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime\_004)



## G: Datasheet

Algorithm: isystems\_3

Developer: Alivia / Innovation Sys

Submission Date: 2018\_10\_30

Template size: 2048 bytes

Template time (2.5 percentile): 811 msec

Template time (median): 826 msec

Template time (97.5 percentile): 1316 msec

Frontal mugshot investigation rank 73 --- FNIR(1600000, 0, 1) = 0.0052 vs. lowest 0.0010 from sensetime\_004

natural investigation rank 77 --- FNIR(1600000, 0, 1) = 0.0230 vs. lowest 0.0067 from sensetime\_003

natural investigation rank 149 --- FNIR(1600000, 0, 1) = 0.6914 vs. lowest 0.0492 from paravision\_005

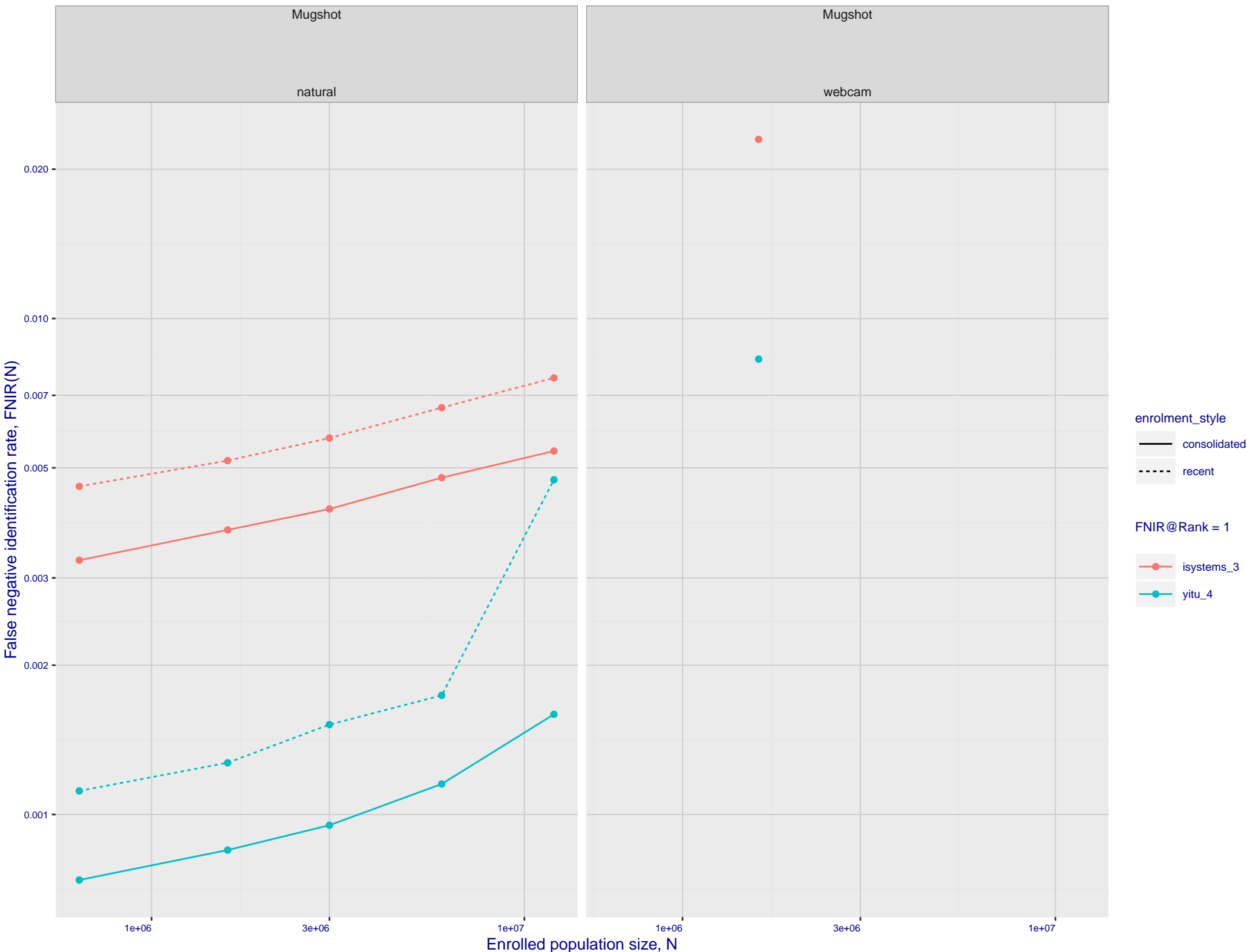
natural investigation rank 149 --- FNIR(1600000, 0, 1) = 0.6914 vs. lowest 0.0492 from paravision\_005

Frontal mugshot identification rank 88 --- FNIR(1600000, T, L+1) = 0.0587 vs. lowest 0.0018 from sensetime\_004

natural identification rank 60 --- FNIR(1600000, T, L+1) = 0.1073 vs. lowest 0.0122 from sensetime\_003

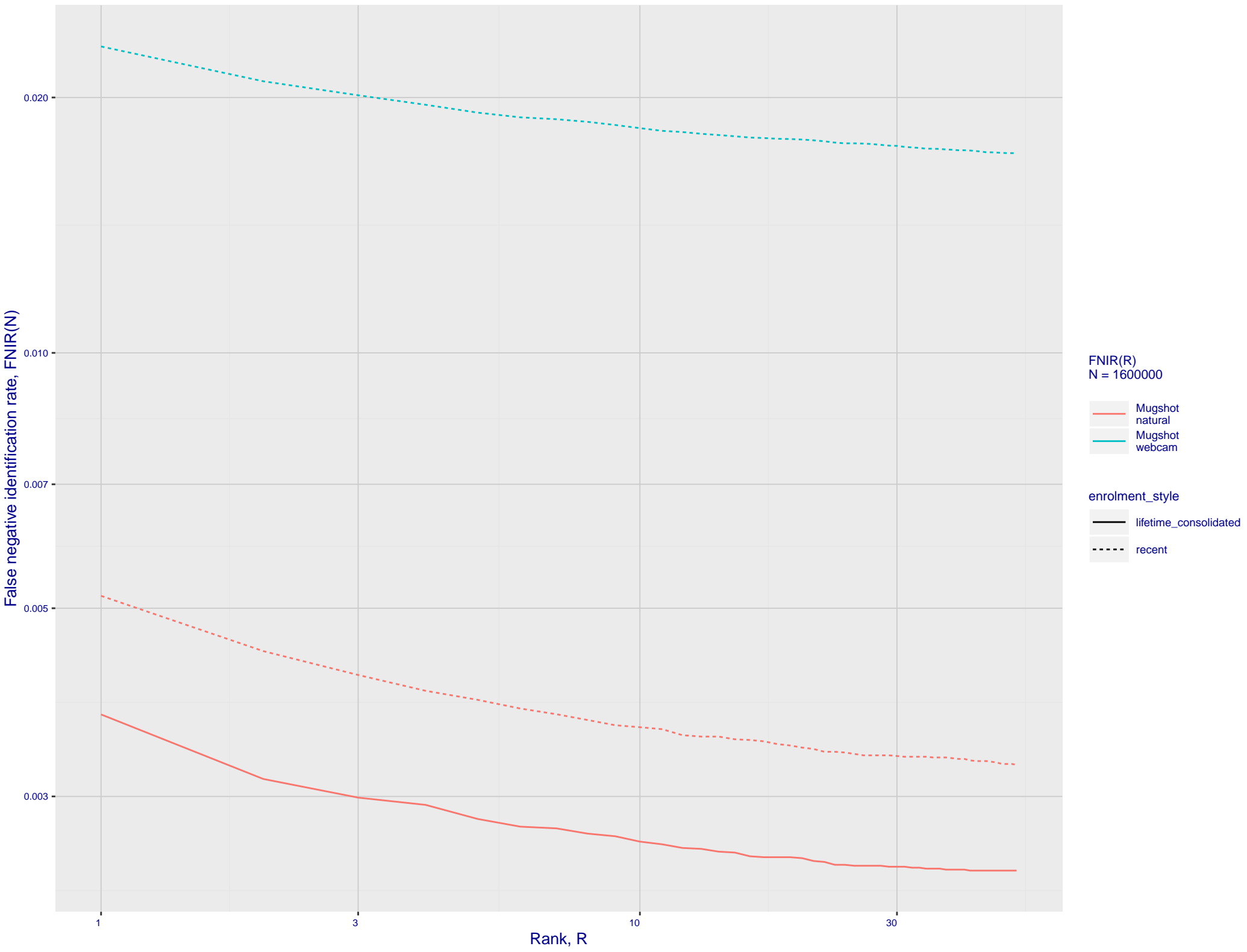
natural identification rank 141 --- FNIR(1600000, T, L+1) = 0.9994 vs. lowest 0.1020 from sensetime\_004

H: Investigational mode: FNIR(N, 1, 0) vs. most accurate (yitu\_4)

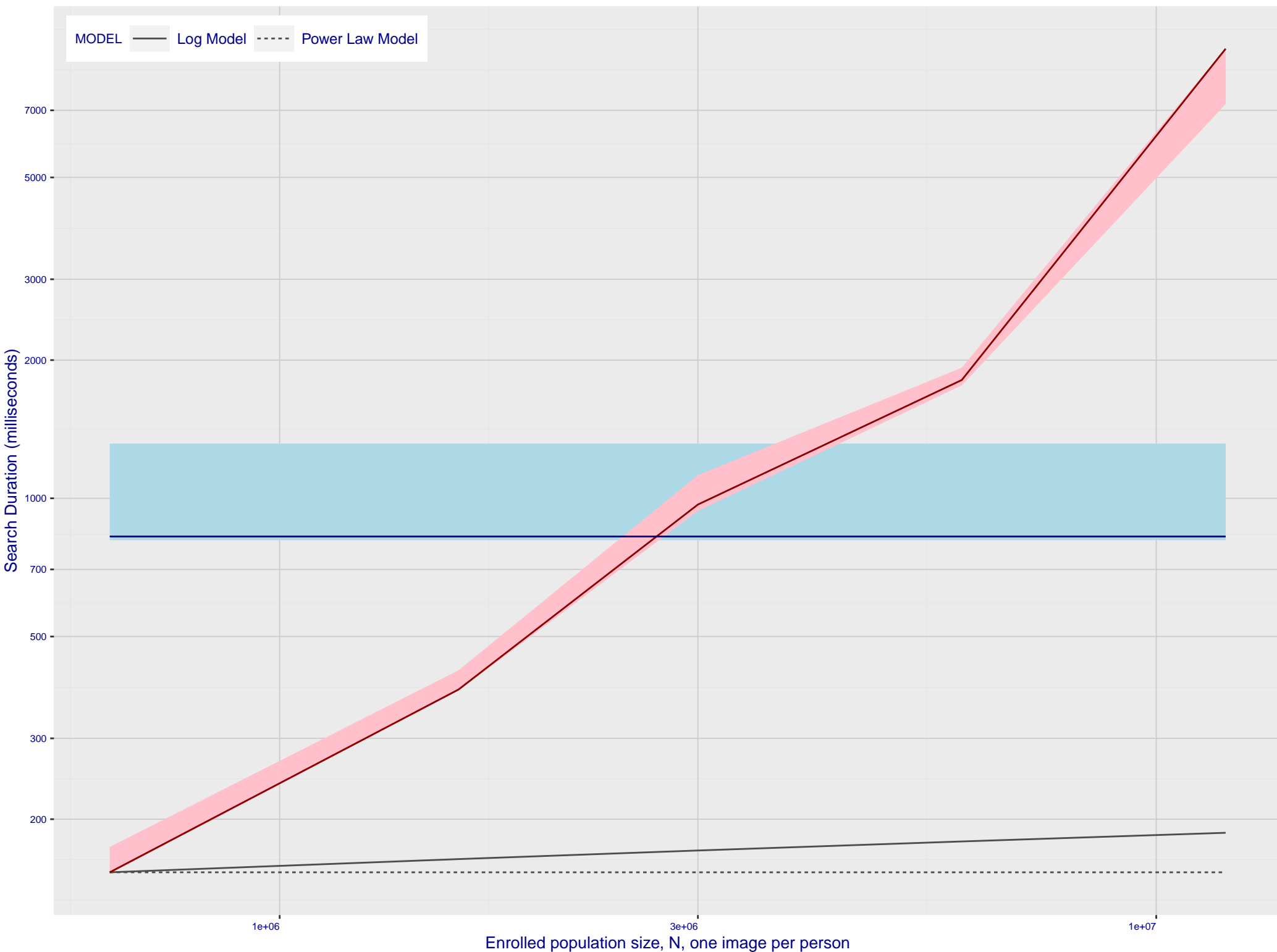




I: Investigational mode: FNIR(1600000, R, 0) by probe type

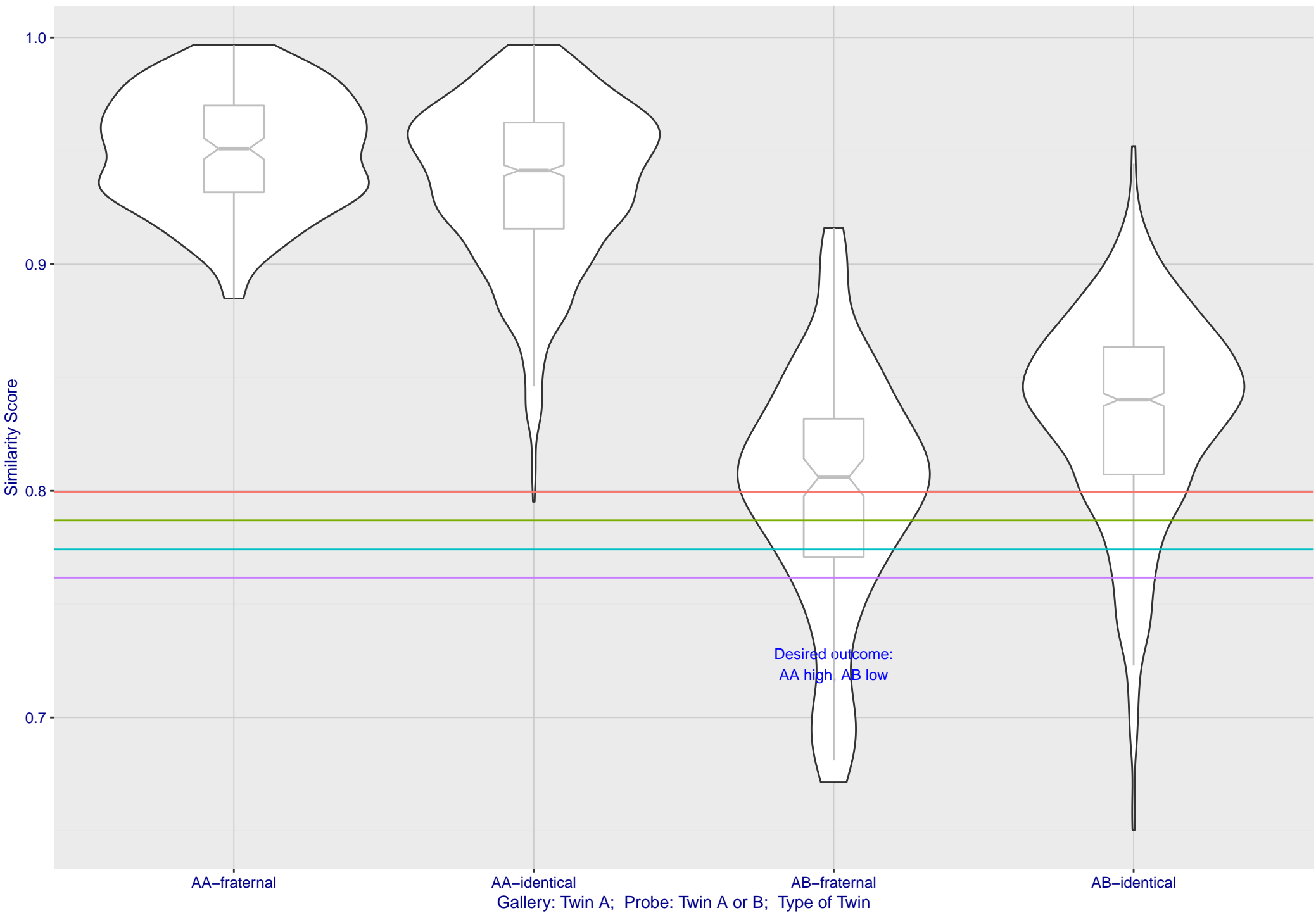


Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power-law models are fit to the first two (N,T) observations



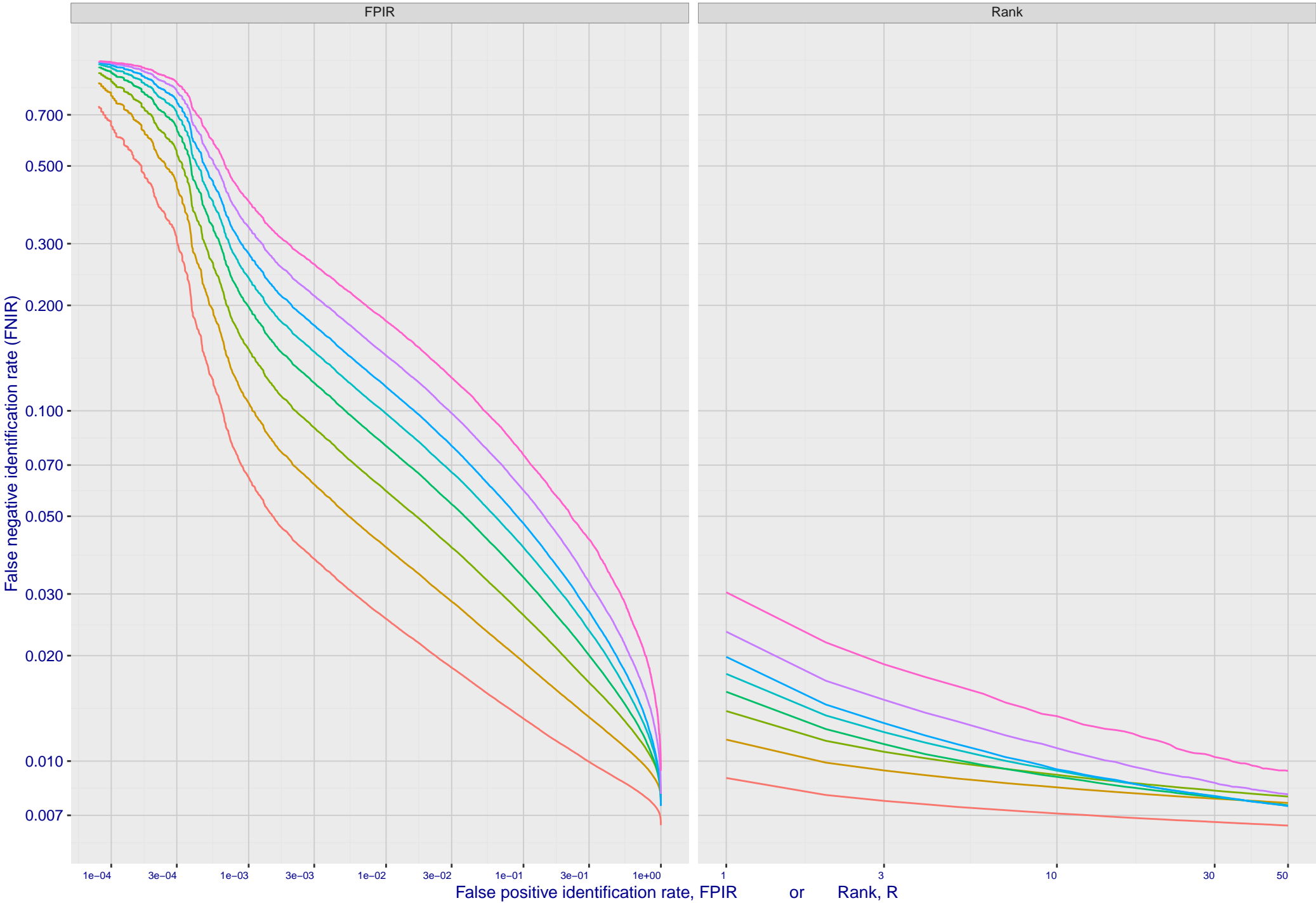
# Solo-Twin and Twin-Twin similarity scores

TVAL FPIR = 0.001 FPIR = 0.003 FPIR = 0.010 FPIR = 0.030



M: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

Dataset: 2018 Mugshot    N = 3068801



# N: Decline of genuine scores with ageing

