

A: Datasheet

Algorithm: hr_000

Developer: Hengrui AI Technology

Submission Date: 2021_02_10

Template size: 2048 bytes

Template time (2.5 percentile): 904 msec

Template time (median): 905 msec

Template time (97.5 percentile): 939 msec

Investigation:

Frontal mugshot ranking 14 (out of 271) -- FNIR(1600000, 0, 1) = 0.0015 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 18 (out of 232) -- FNIR(1600000, 0, 1) = 0.0099 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 2 (out of 201) -- FNIR(1600000, 0, 1) = 0.0635 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 4 (out of 160) -- FNIR(1600000, 0, 1) = 0.0019 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 1 (out of 157) -- FNIR(1600000, 0, 1) = 0.0568

Identification:

Frontal mugshot ranking 4 (out of 271) -- FNIR(1600000, T, L+1) = 0.0020, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

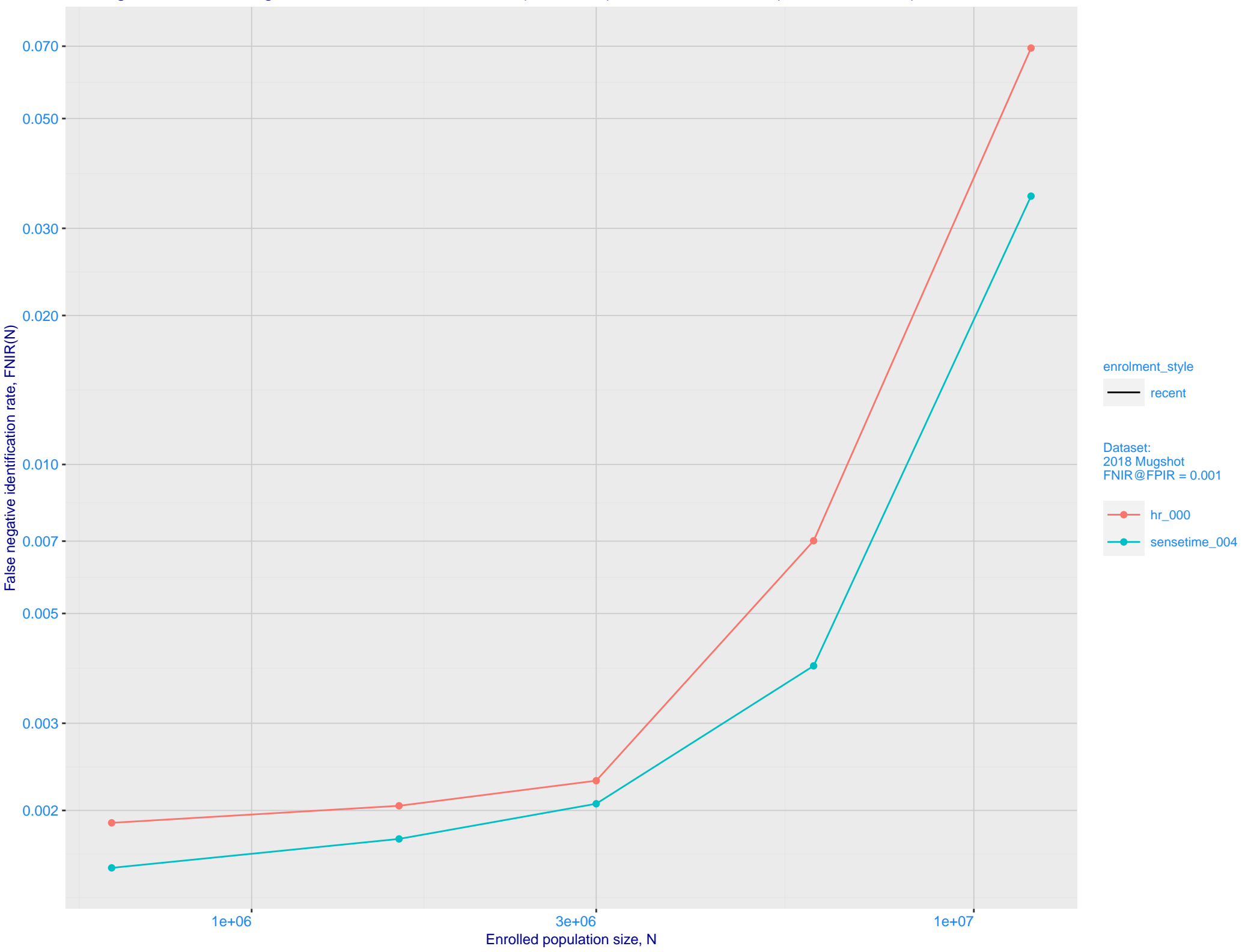
Mugshot webcam ranking 4 (out of 230) -- FNIR(1600000, T, L+1) = 0.0134, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 1 (out of 200) -- FNIR(1600000, T, L+1) = 0.1331, FPIR=0.001000

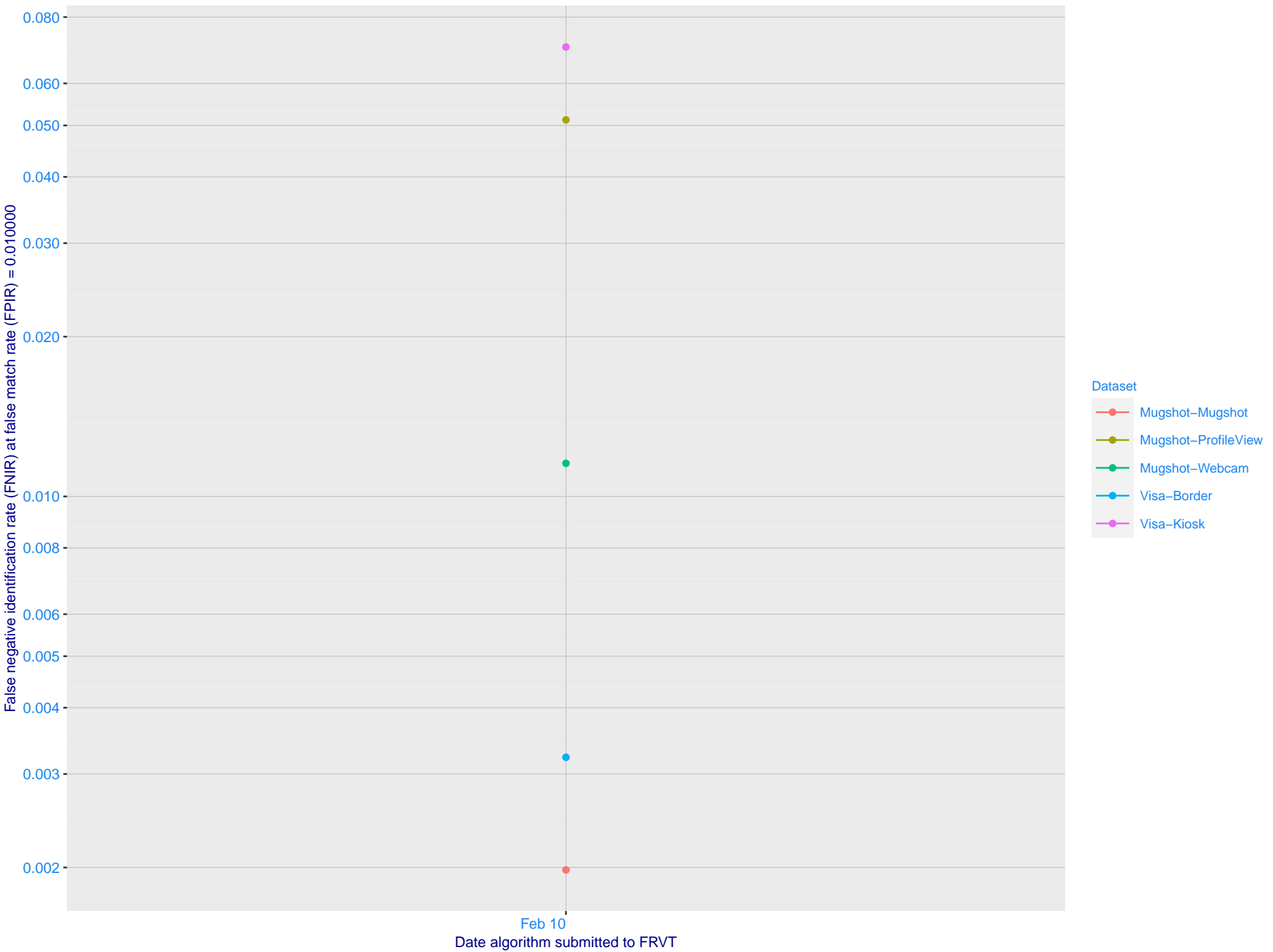
Immigration visa-border ranking 2 (out of 159) -- FNIR(1600000, T, L+1) = 0.0049, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa-kiosk ranking 1 (out of 154) -- FNIR(1600000, T, L+1) = 0.0996, FPIR=0.001000

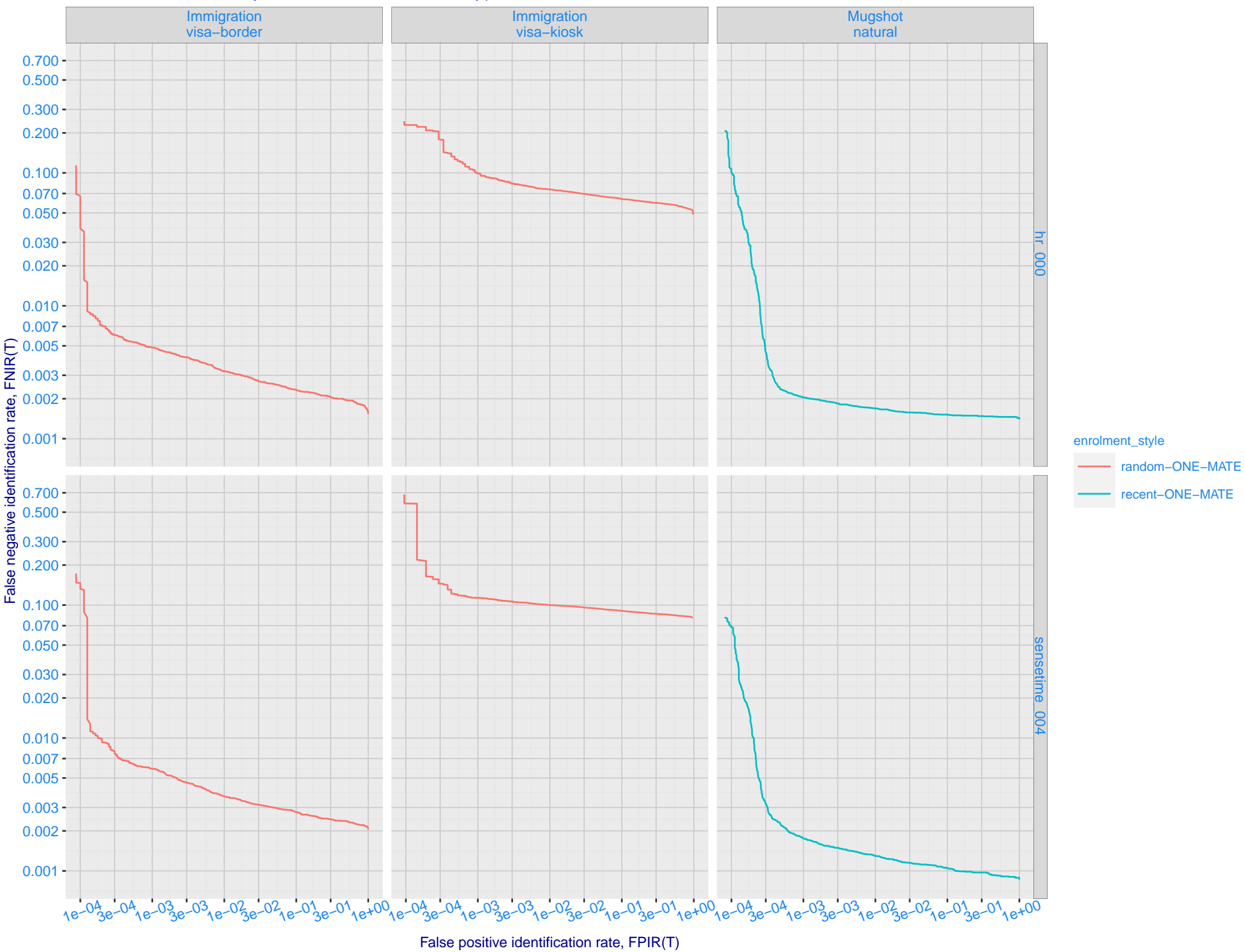
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)



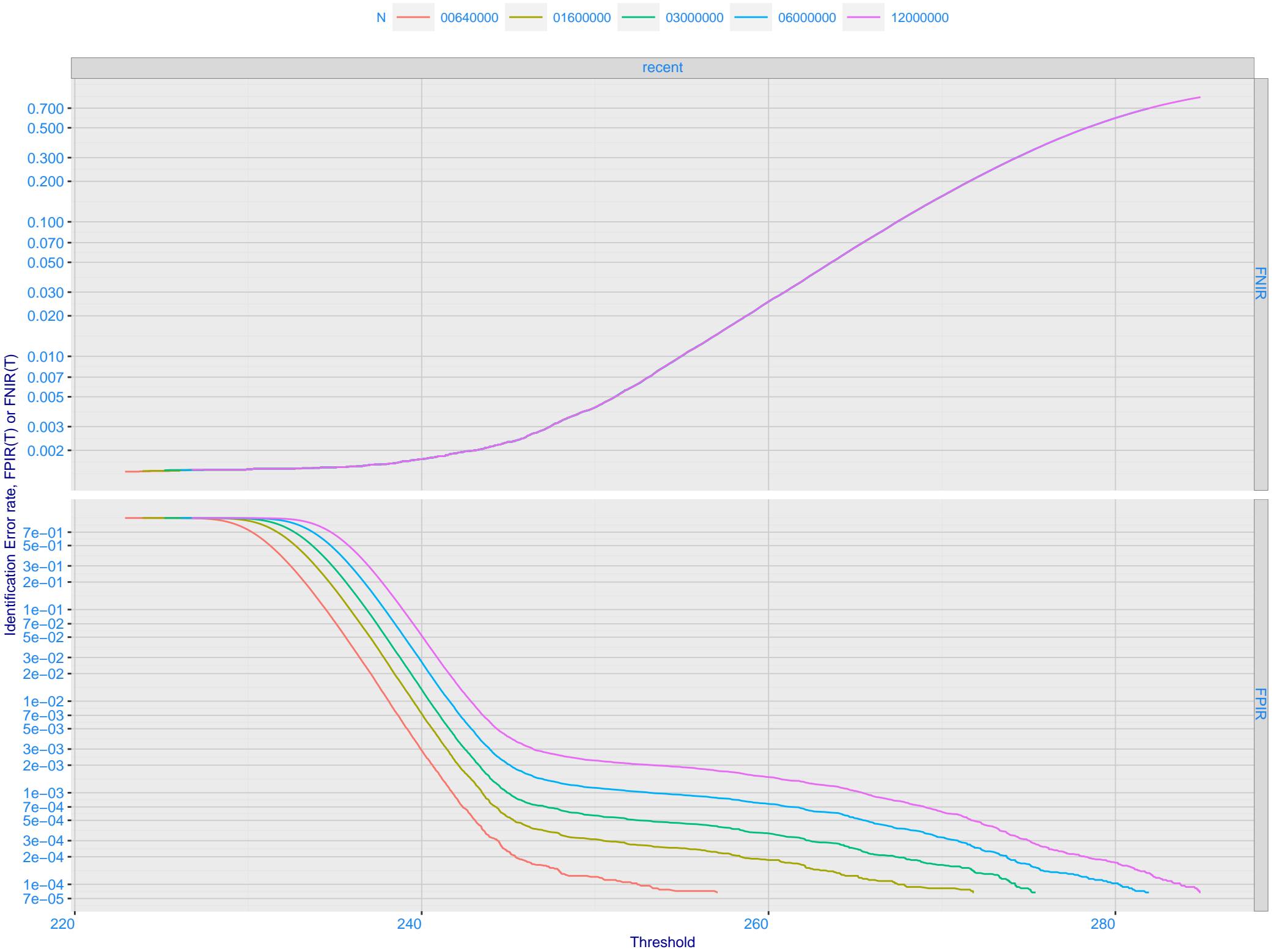
C: Evolution of accuracy for HR algorithms on three datasets 2018 – present



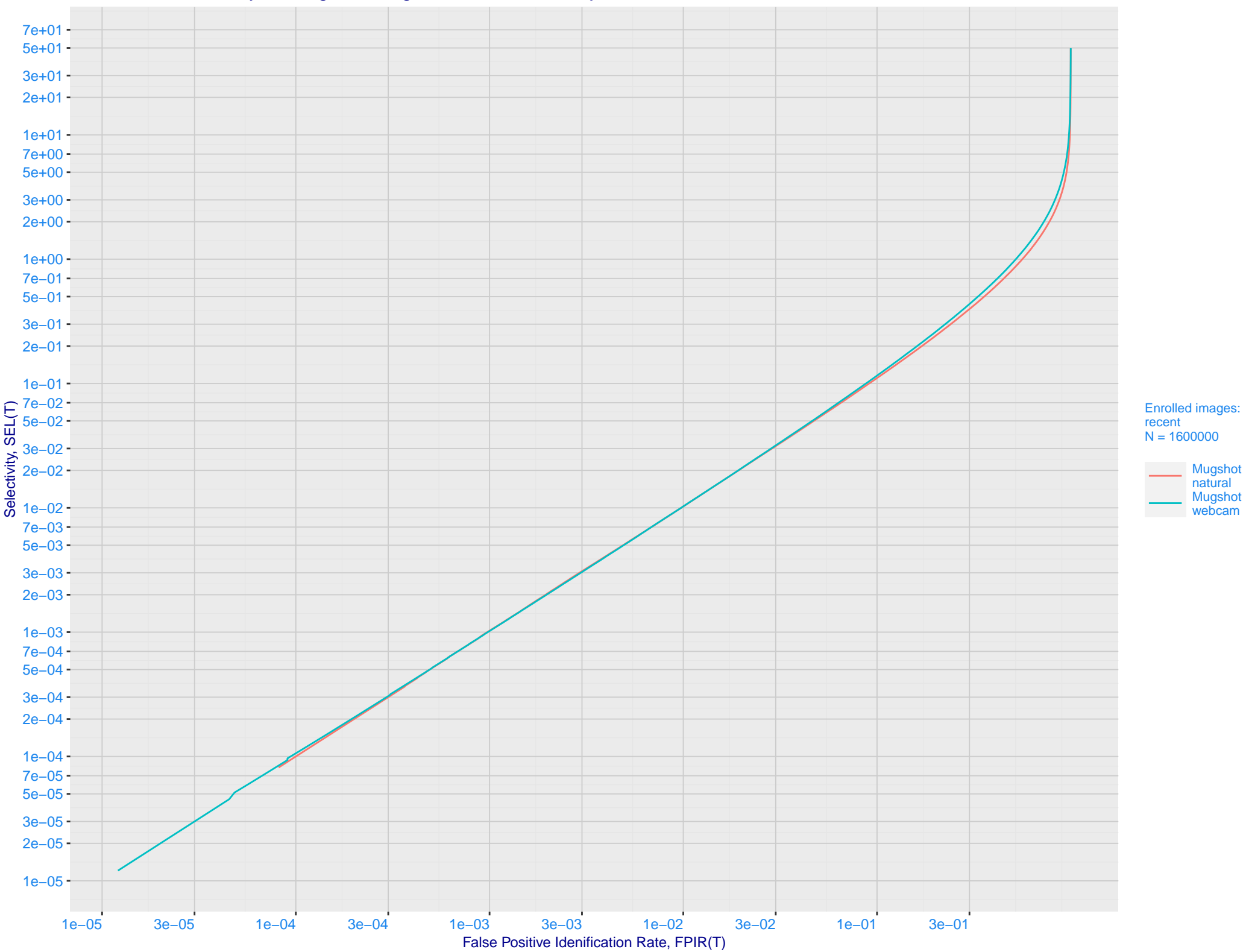
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals



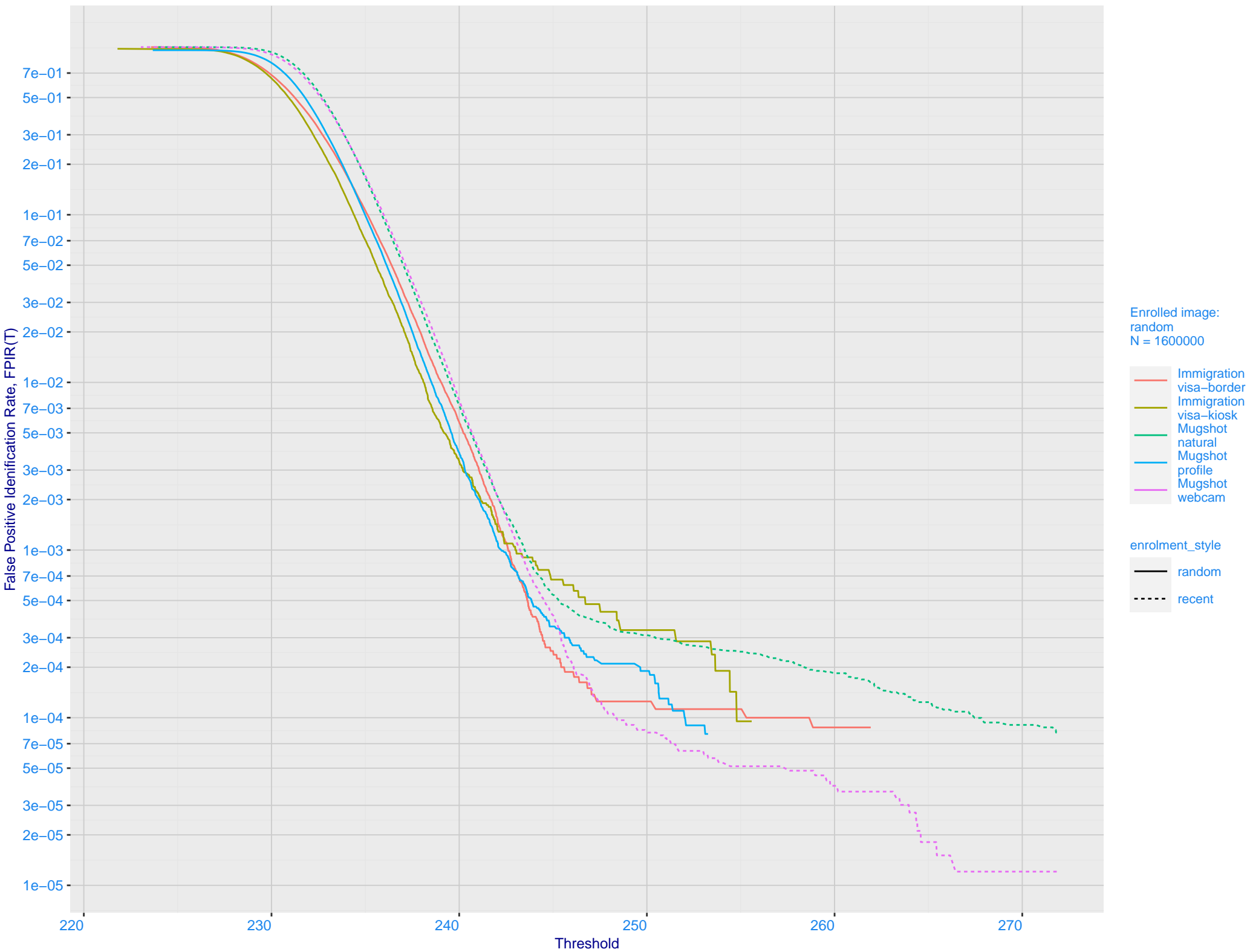
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



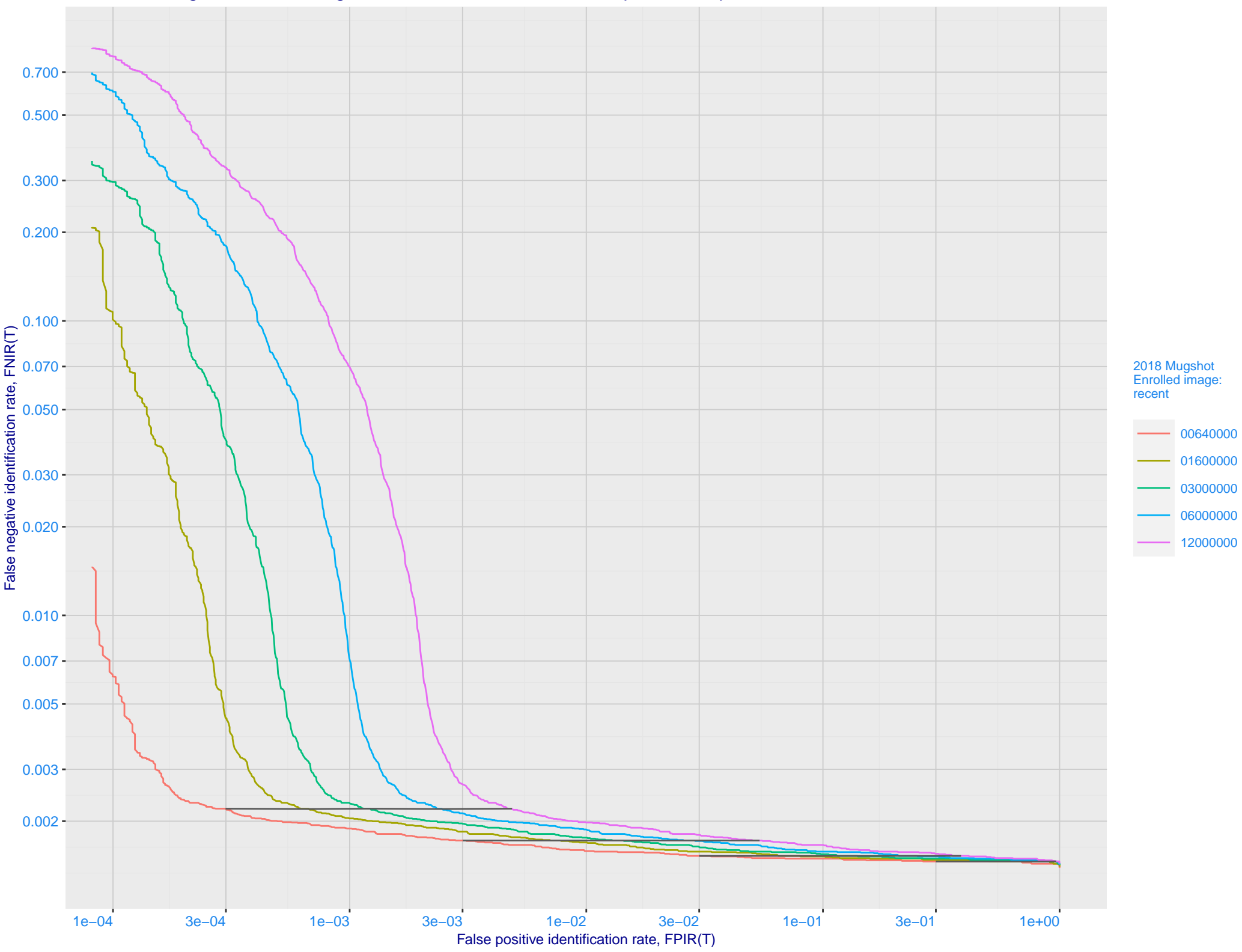
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate



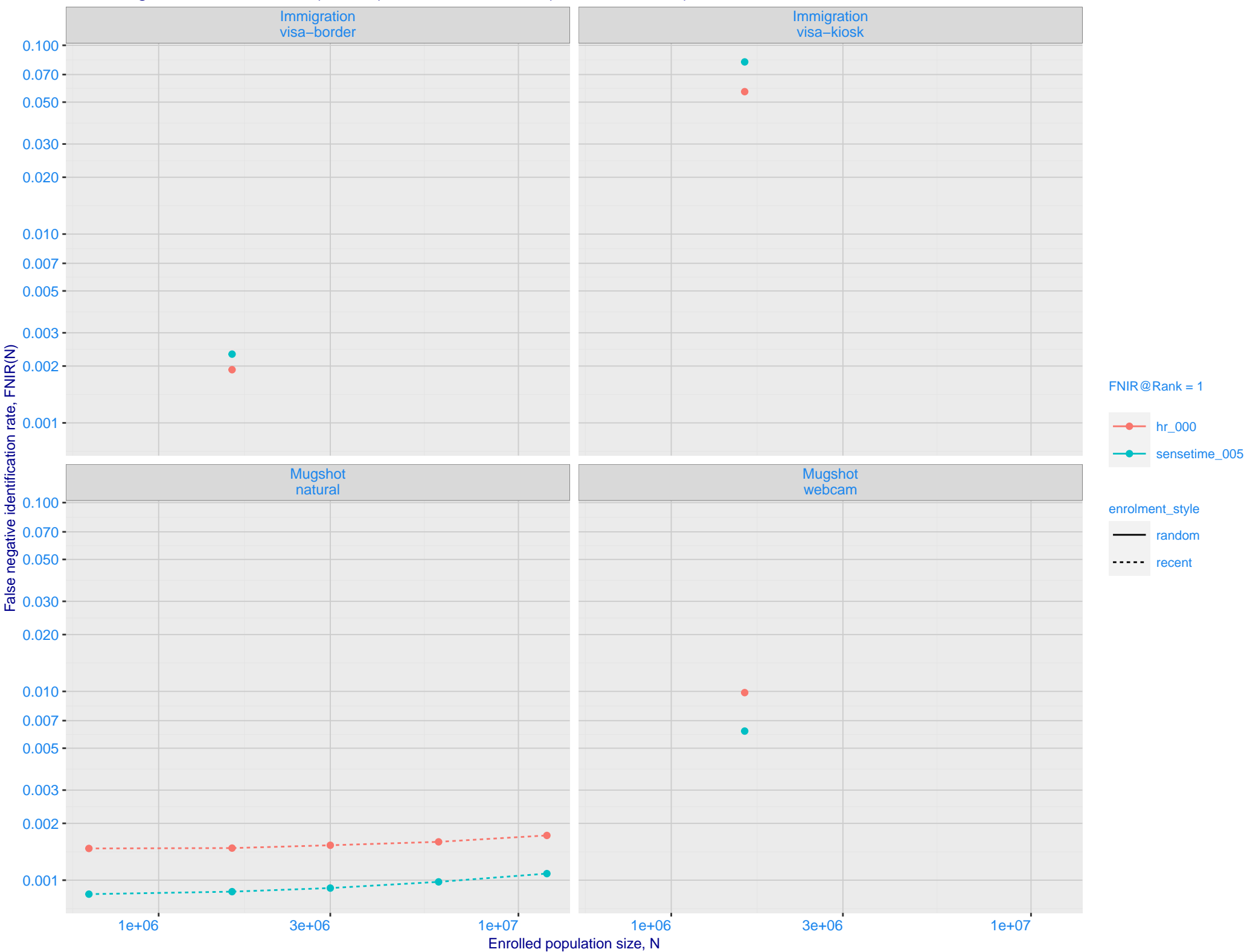
G: FPIR dependence on T by probe type for N = 1600000 subjects



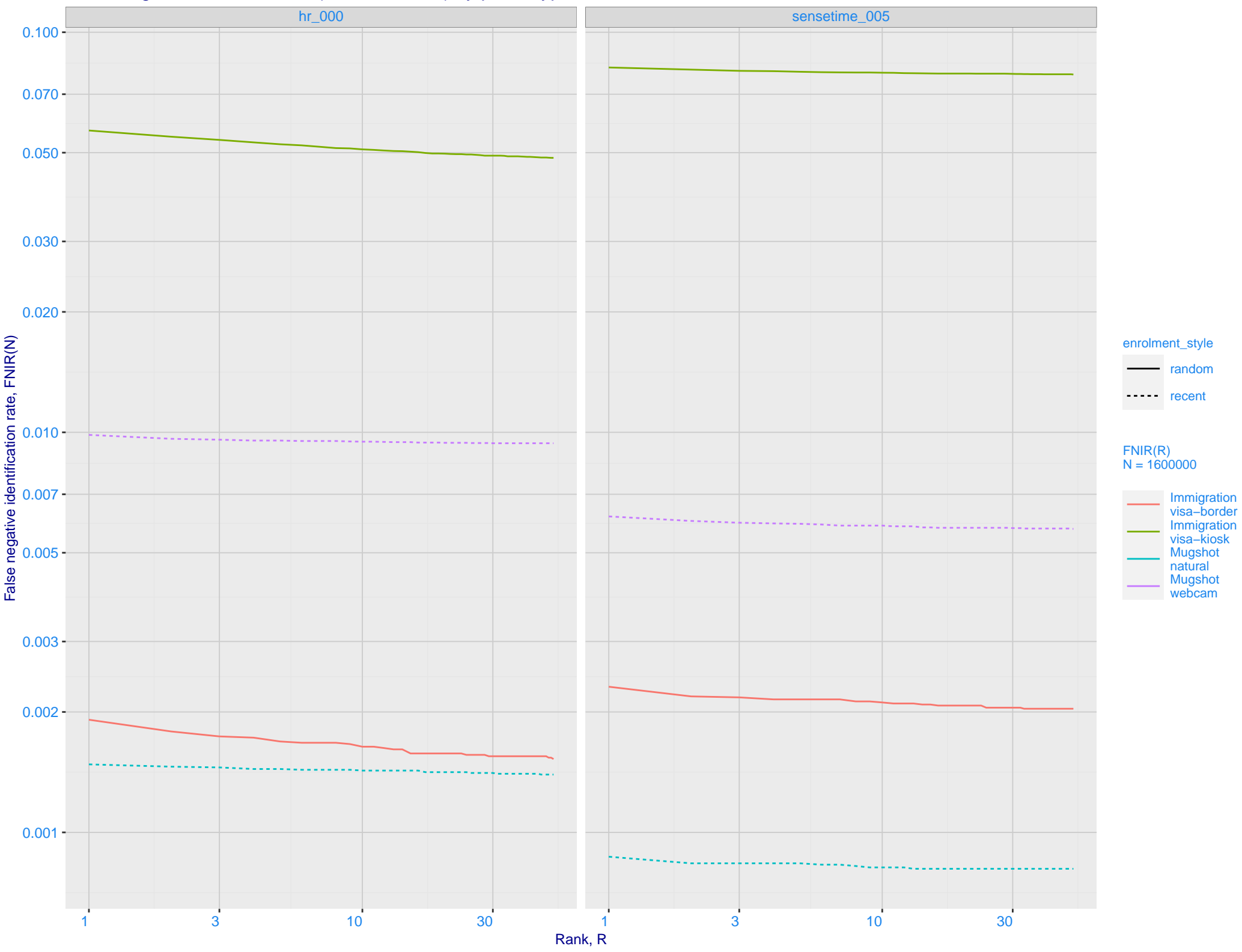
H: DET for Mugshot natural images and various N. Links connect points of equal threshold.



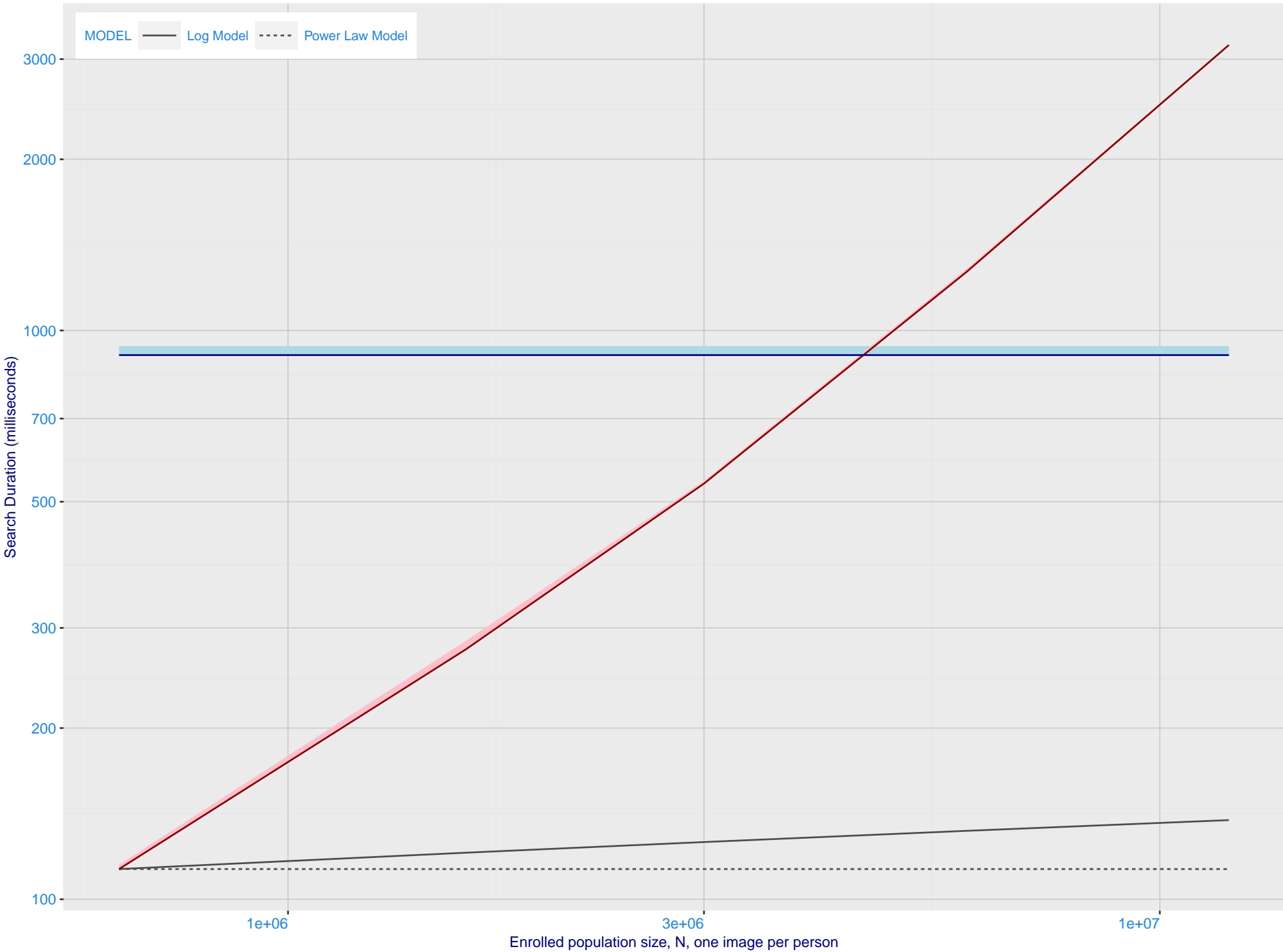
I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)



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

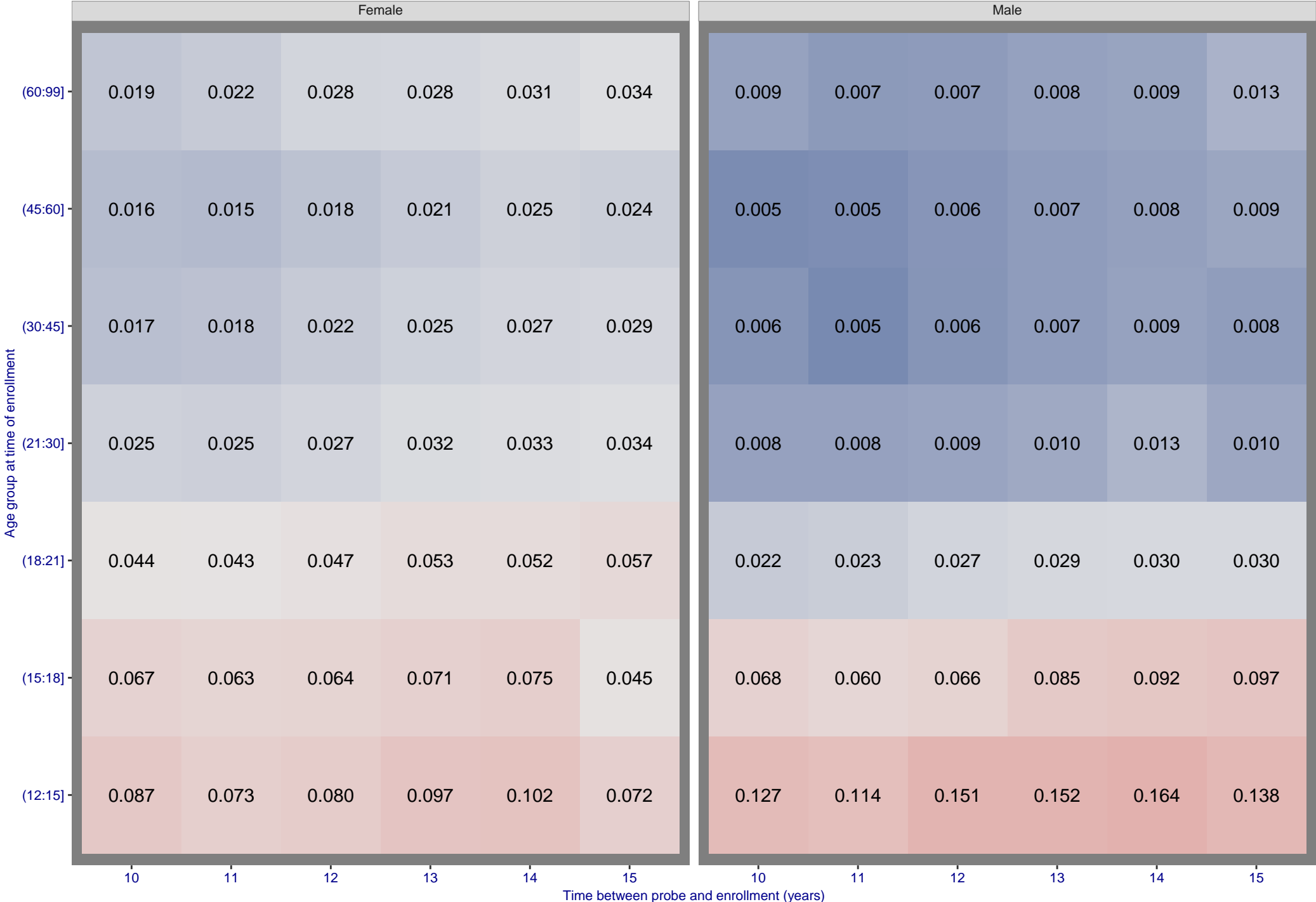


K: Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements.
The template generation time is independent of N. The log and power-law models are fit to the first two (N,T) observations



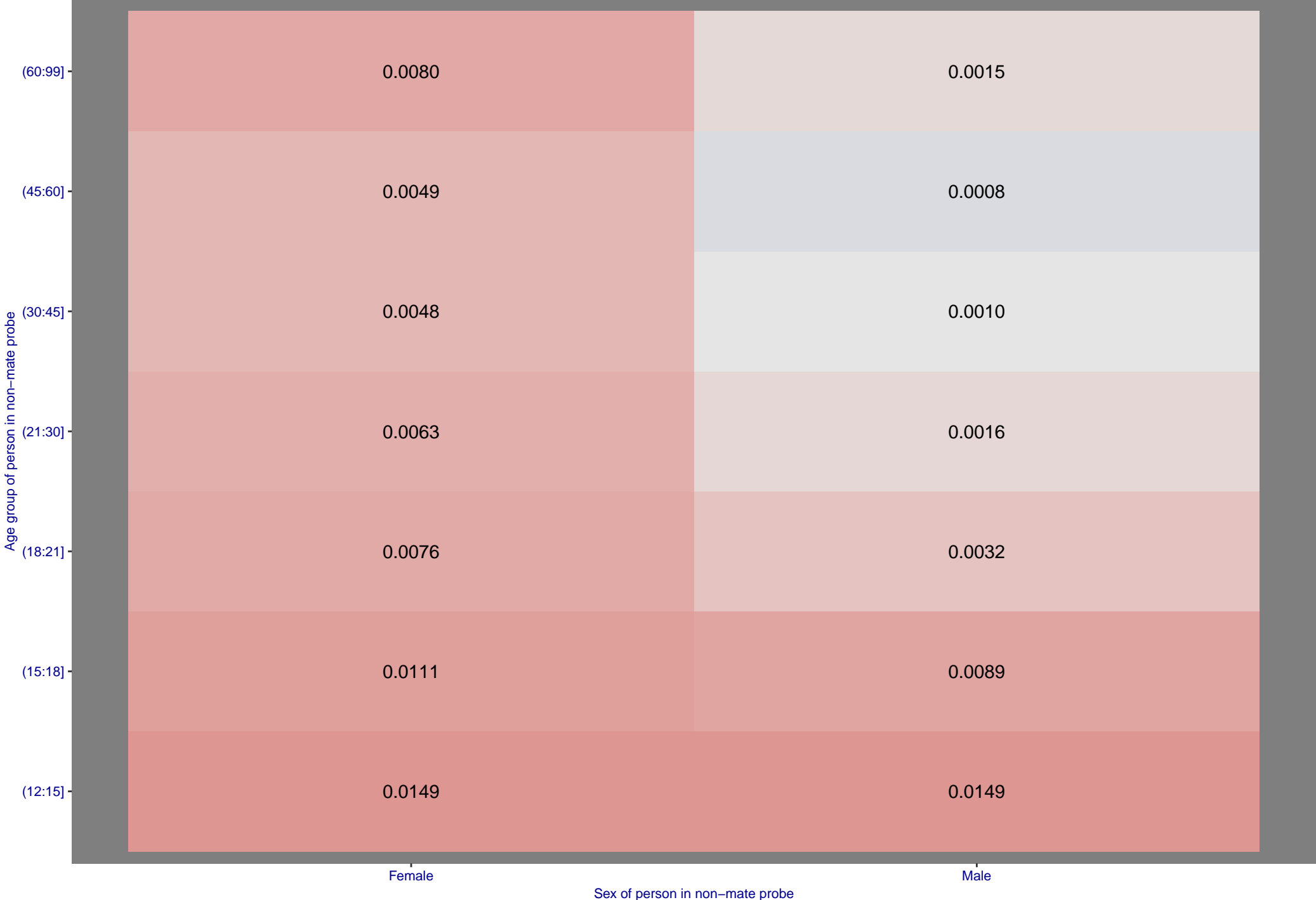
M-A: FNIR(T, N = 1.6 million) by sex, age and time-lapse

Algorithm: hr_000, Dataset: Border-Crossing Ageing
Threshold: 242.501000 set to achieve FPIR(30-45, Male) = 0.001



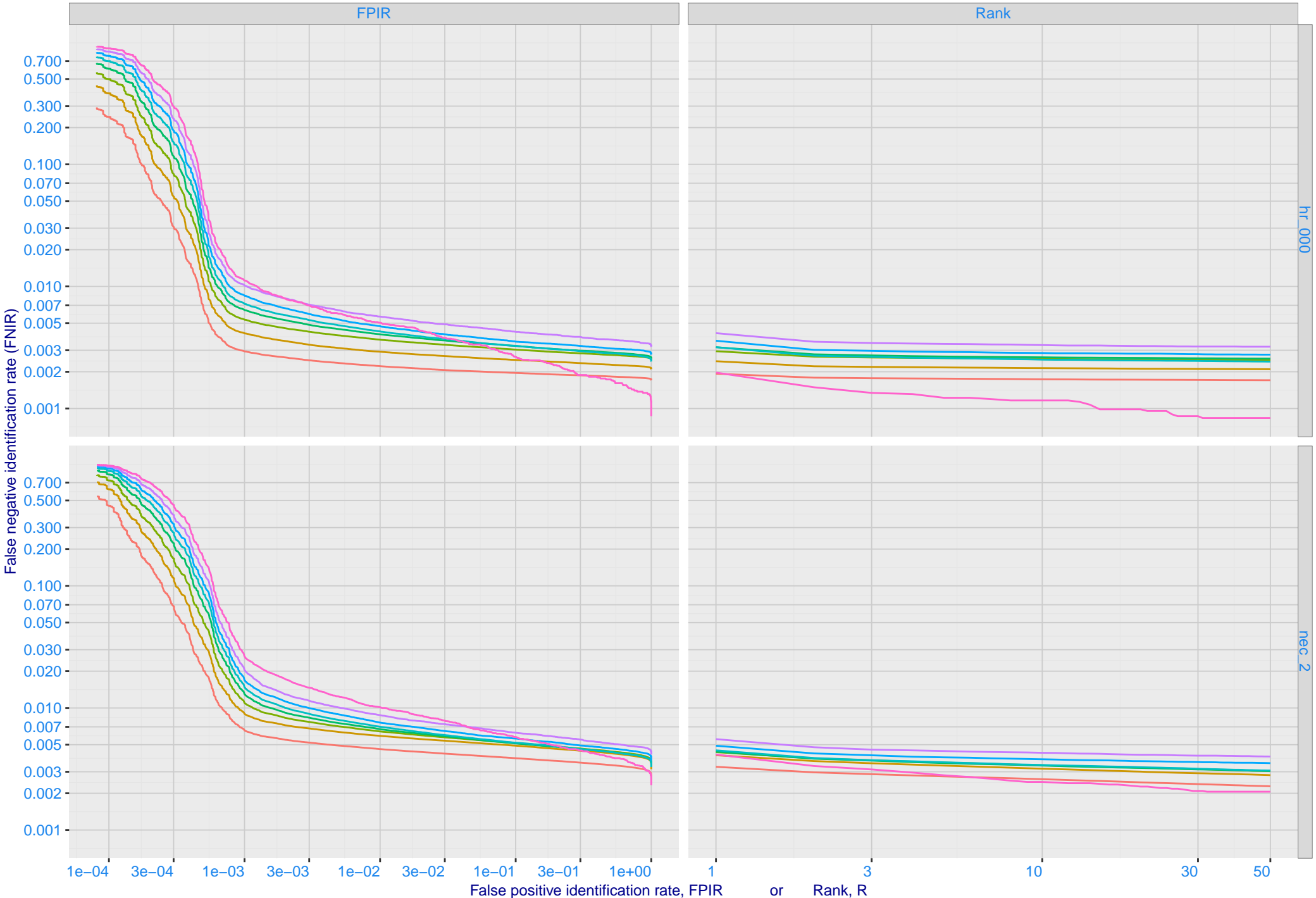
M-B: FPIR(T, N = 1.6 million) by sex and age

Algorithm: hr_000, Dataset: Border-Crossing Ageing
Threshold: 242.501000 set to achive FPIR(30-45, Male) = 0.001



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

Dataset: 2018 Mugshot N = 3068801



O: Decline of genuine scores with ageing

