## A: Datasheet

Algorithm: ntechlab_007

Developer: N–Tech Lab

Submission Date: 2019_06_25

Template size: 3348 bytes

Template time (2.5 percentile): 791 msec

Template time (median): 795 msec

Template time (97.5 percentile): 1016 msec

Investigation:

Frontal mugshot ranking 90 (out of 329) –– FNIR(1600000, 0, 1) = 0.0027  vs. lowest 0.0009 from sensetime_006

Mugshot webcam ranking 65 (out of 291) –– FNIR(1600000, 0, 1) = 0.0125  vs. lowest 0.0057 from sensetime_006

Mugshot profile ranking 67 (out of 260) –– FNIR(1600000, 0, 1) = 0.3259  vs. lowest 0.0550 from sensetime_006

Immigration visa–border ranking 67 (out of 218) –– FNIR(1600000, 0, 1) = 0.0044  vs. lowest 0.0009 from sensetime_006

Immigration visa–kiosk ranking 72 (out of 215) –– FNIR(1600000, 0, 1) = 0.1066  vs. lowest 0.0487 from cubox_000

Identification:

Frontal mugshot ranking 86 (out of 329) –– FNIR(1600000, T, L+1) = 0.0255, FPIR=0.001000  vs. lowest 0.0017 from nec_005
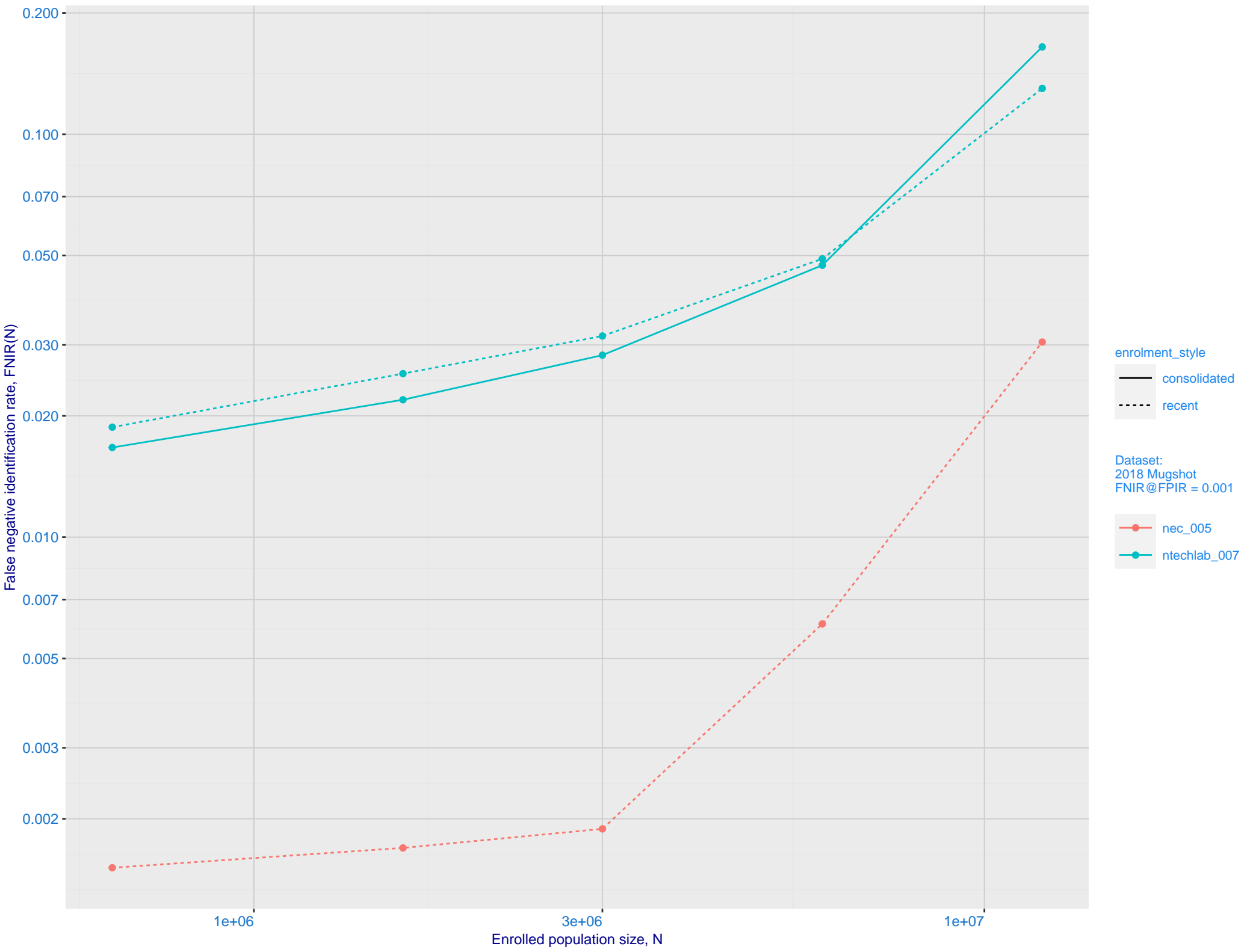
Mugshot webcam ranking 77 (out of 289) –– FNIR(1600000, T, L+1) = 0.0668, FPIR=0.001000  vs. lowest 0.0120 from nec_005

Mugshot profile ranking 36 (out of 259) –– FNIR(1600000, T, L+1) = 0.7499, FPIR=0.001000  vs. lowest 0.1331 from cloudwalk_hr_000
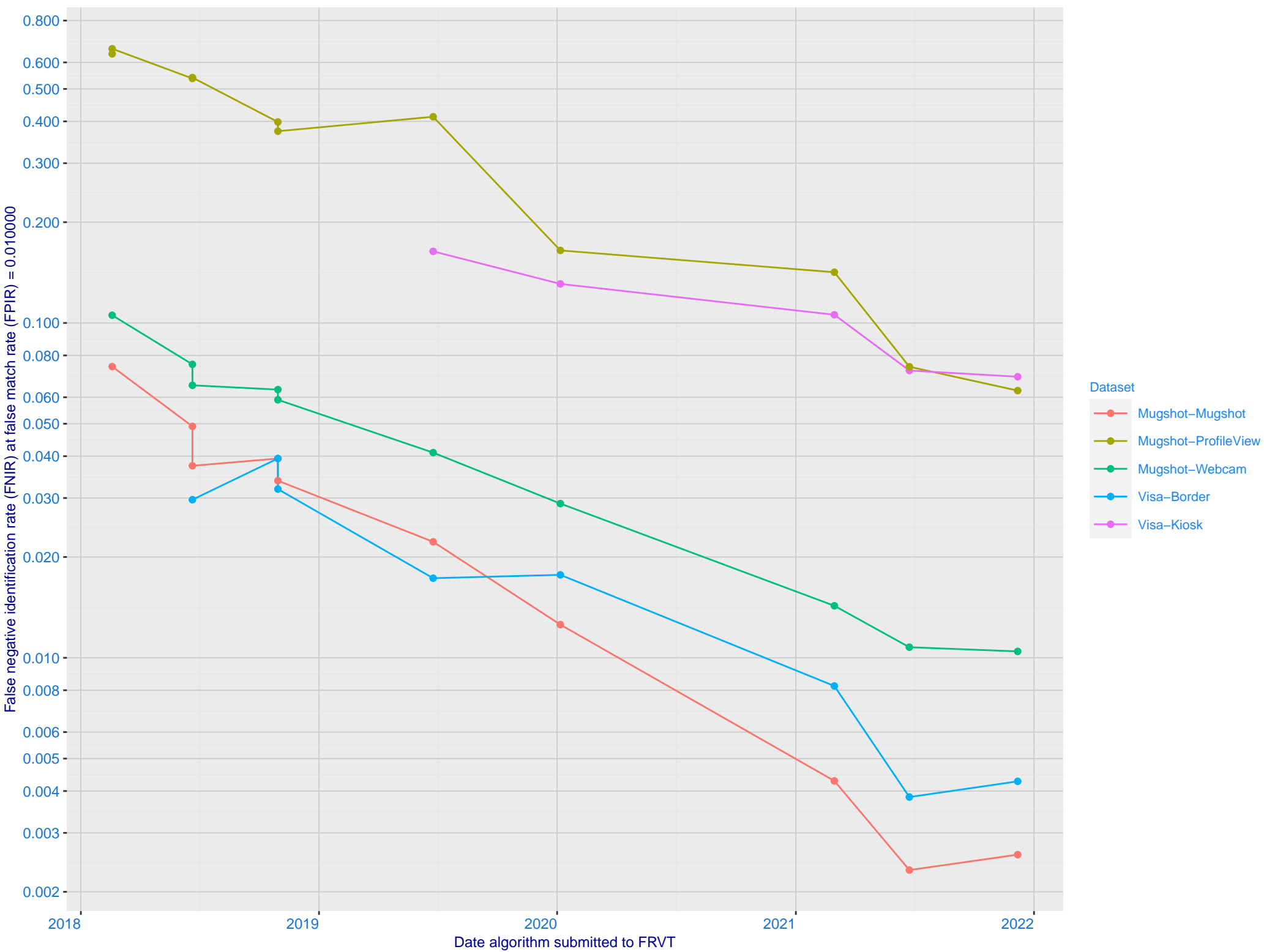
Immigration visa–border ranking 70 (out of 217) –– FNIR(1600000, T, L+1) = 0.0323, FPIR=0.001000  vs. lowest 0.0032 from paravision_009

Immigration visa–kiosk ranking 53 (out of 212) –– FNIR(1600000, T, L+1) = 0.2241, FPIR=0.001000  vs. lowest 0.0728 from paravision_009
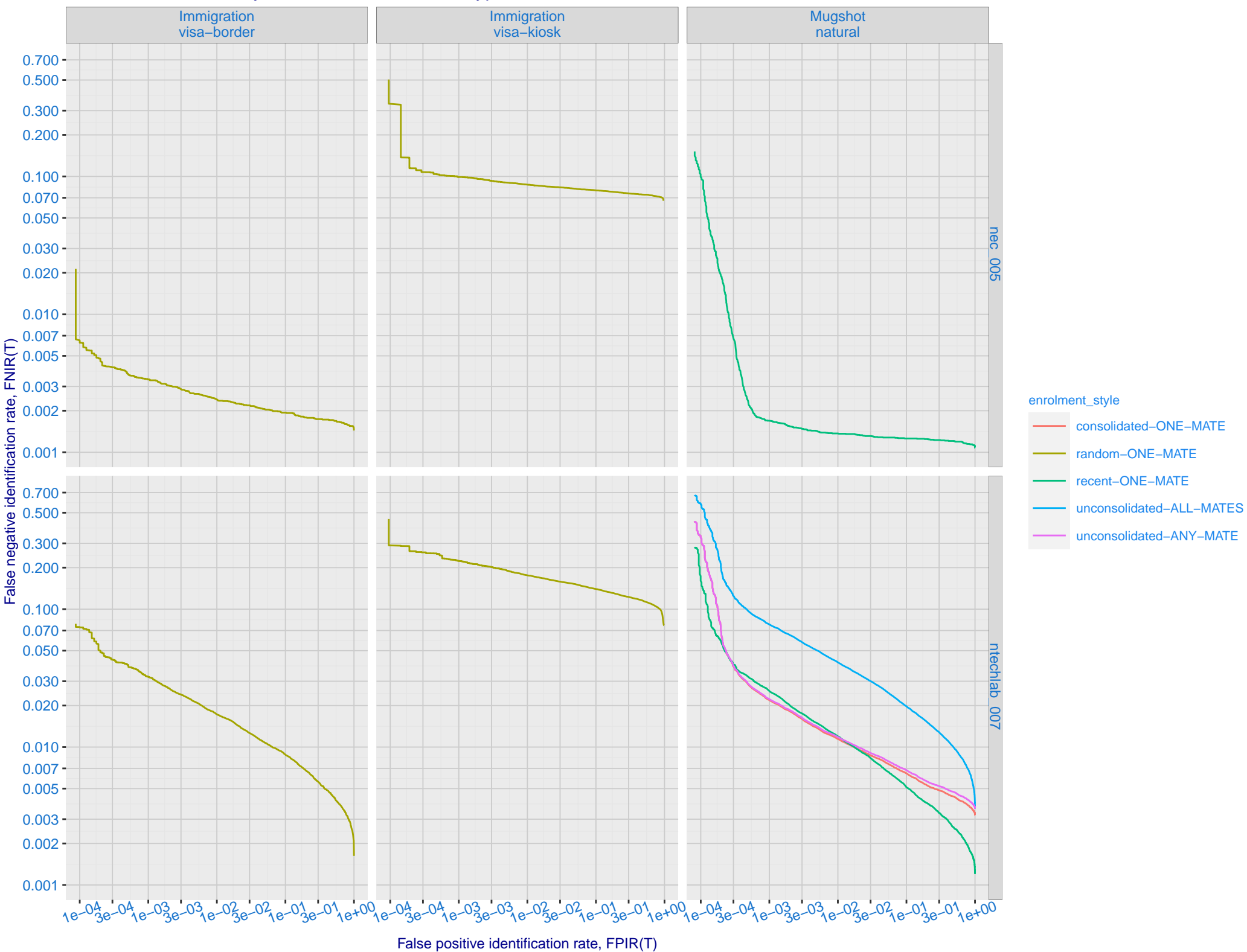
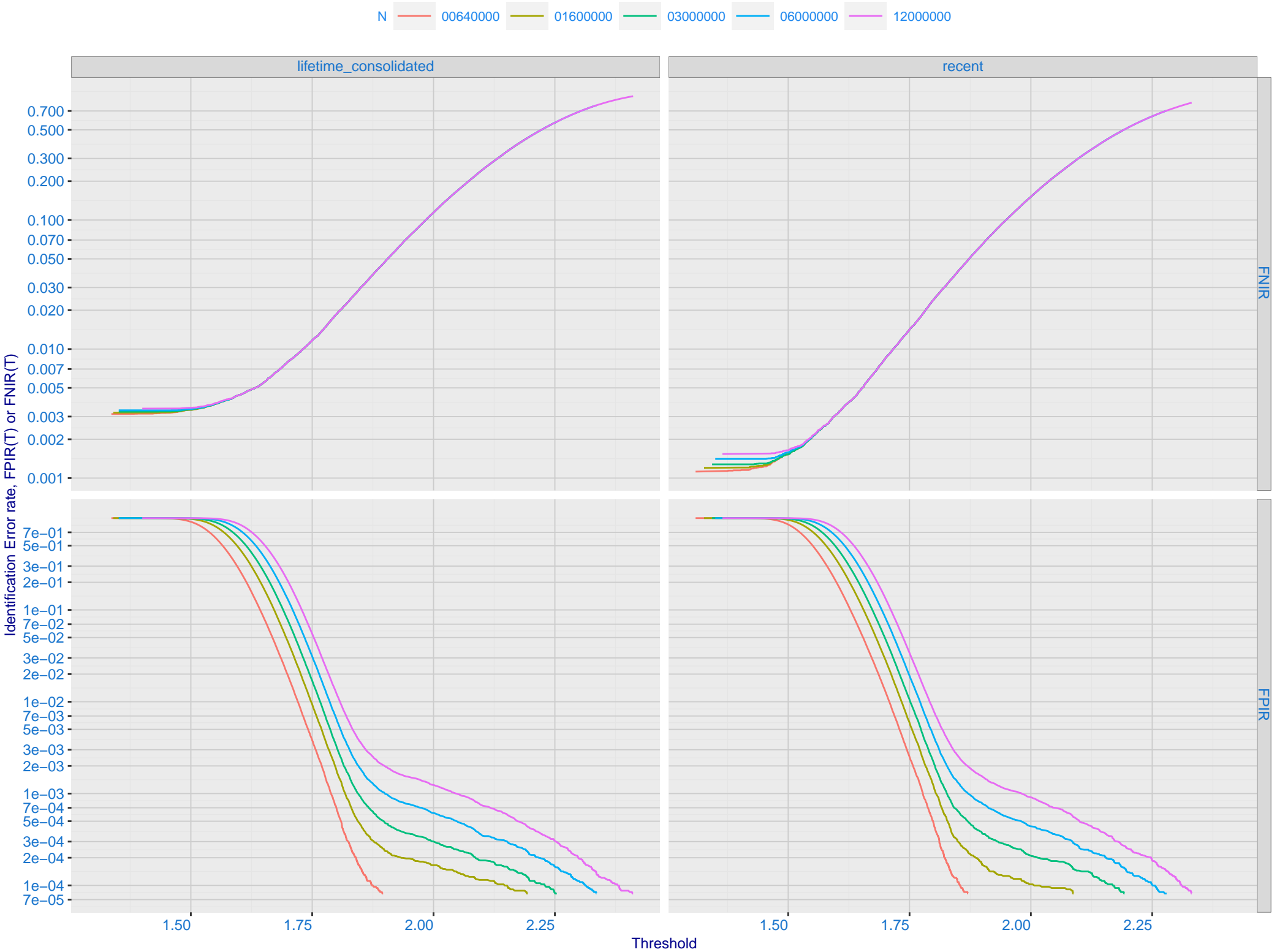B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (nec_005)

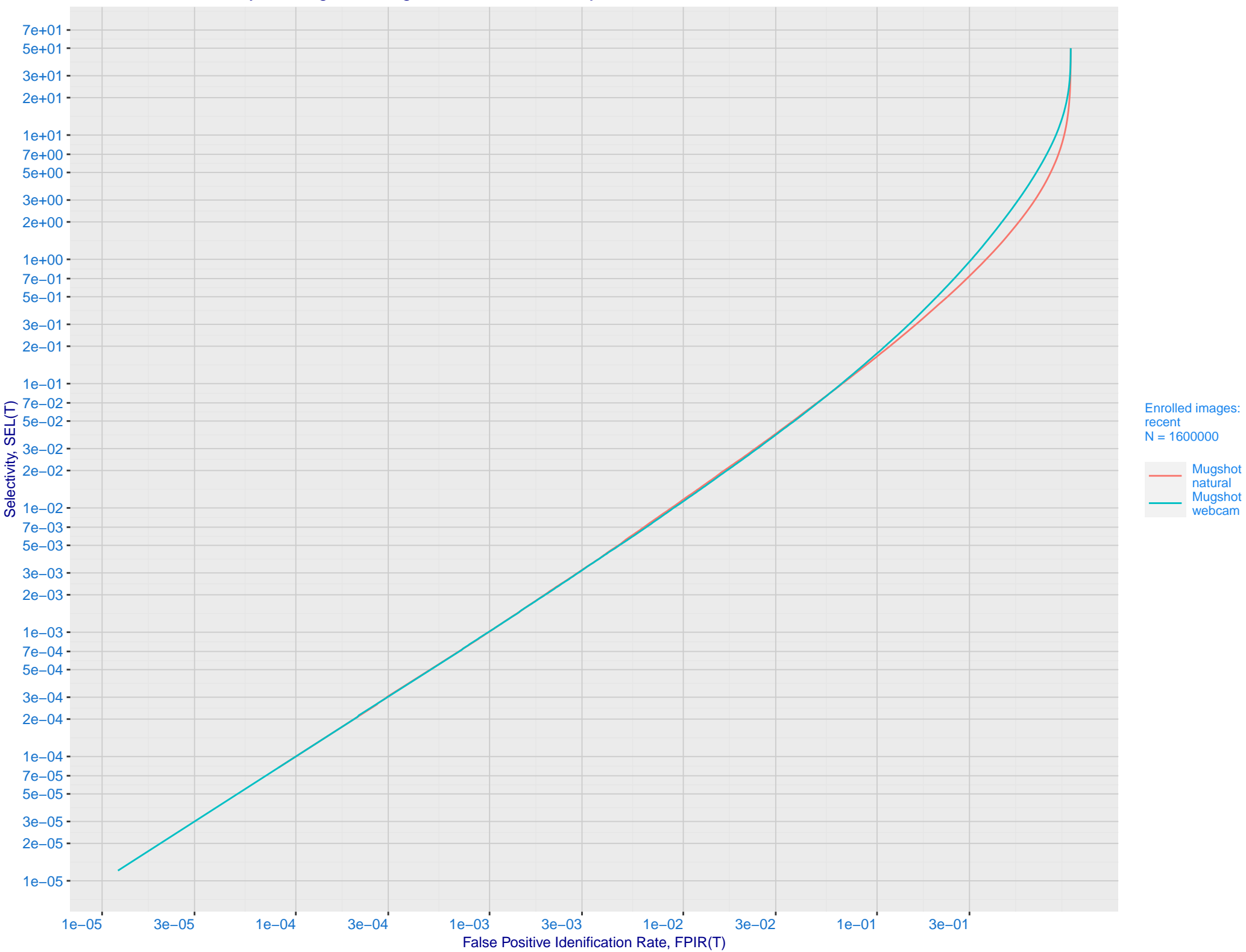**C: Evolution of accuracy for NTECHLAB algorithms on three datasets 2018 – present**

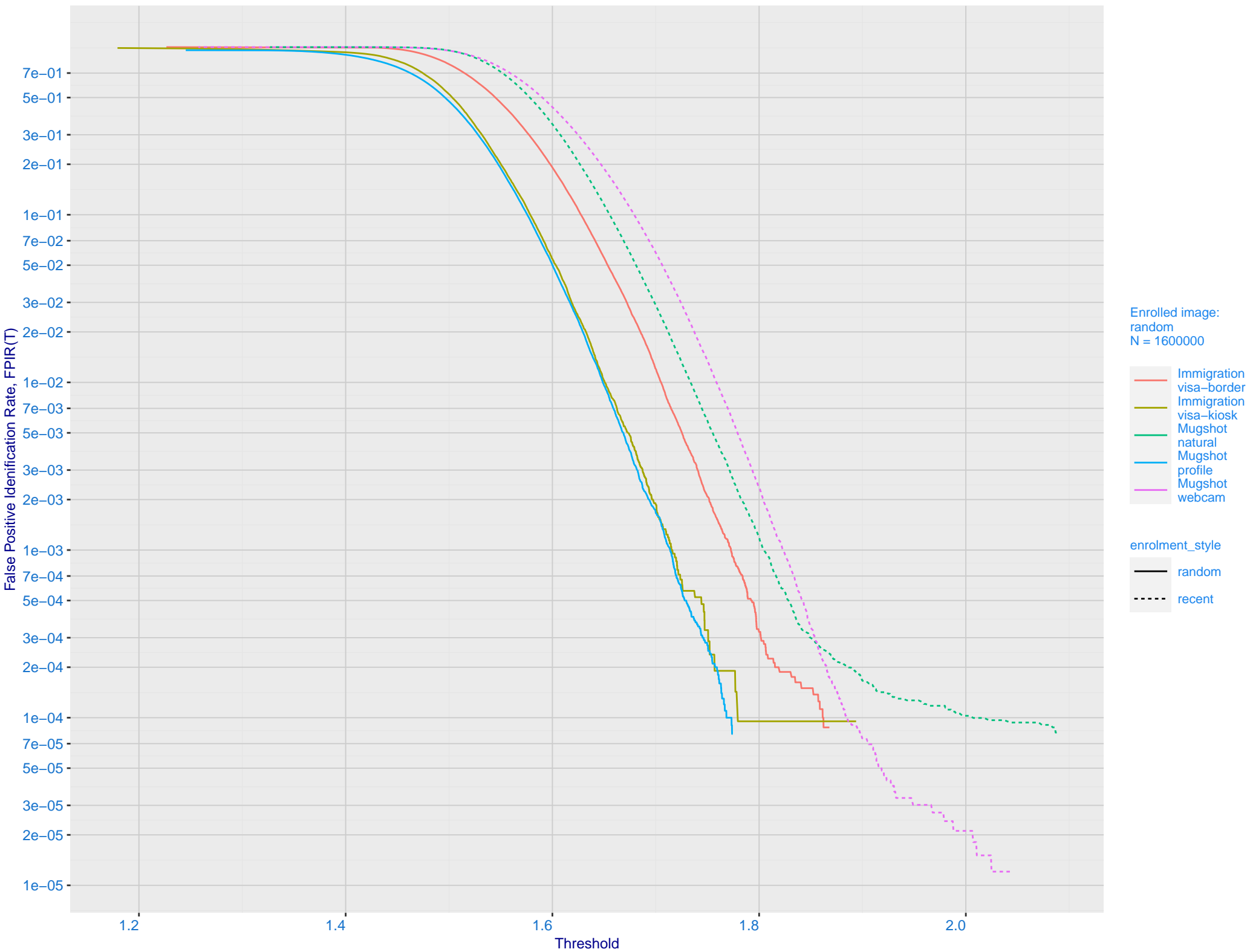D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
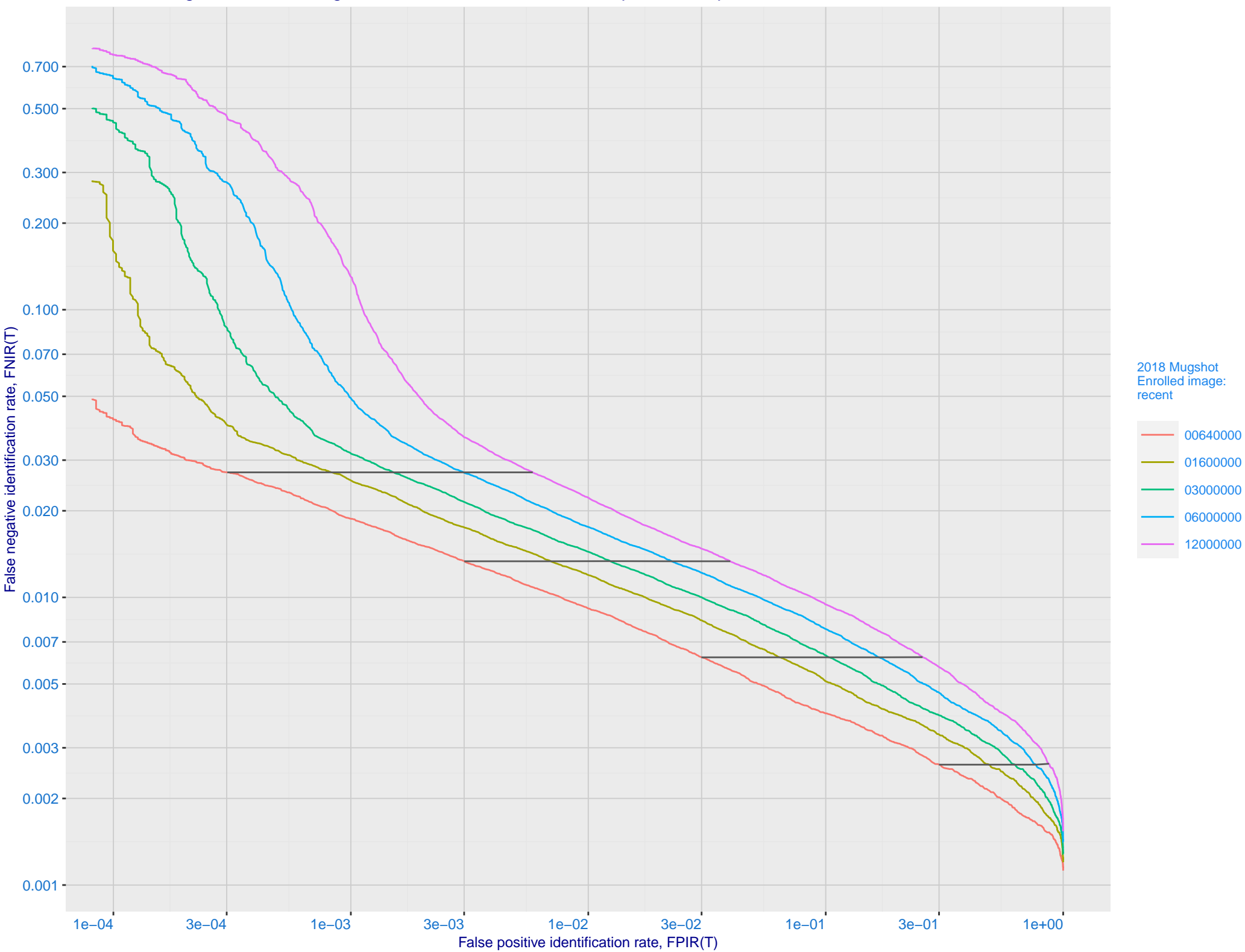
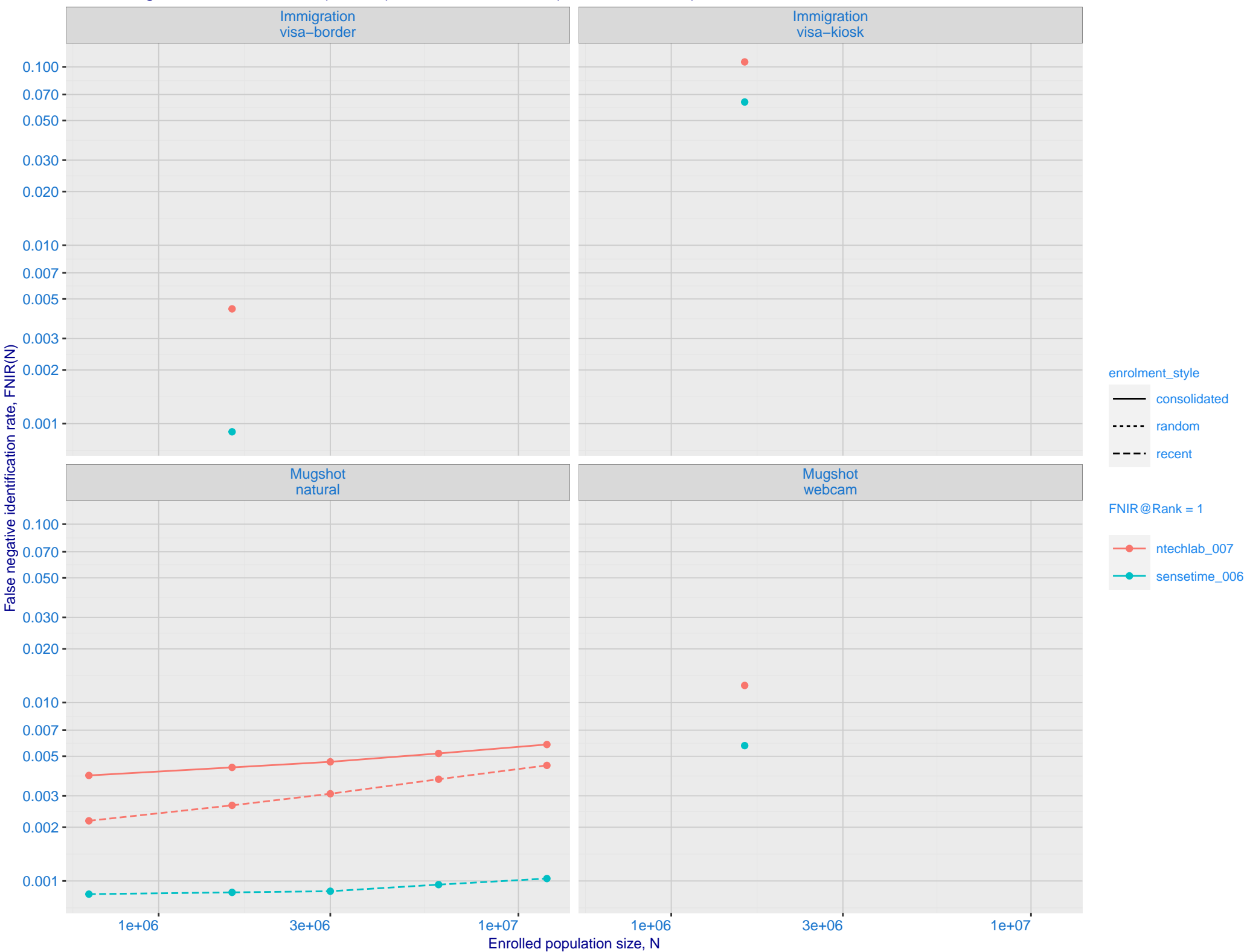F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

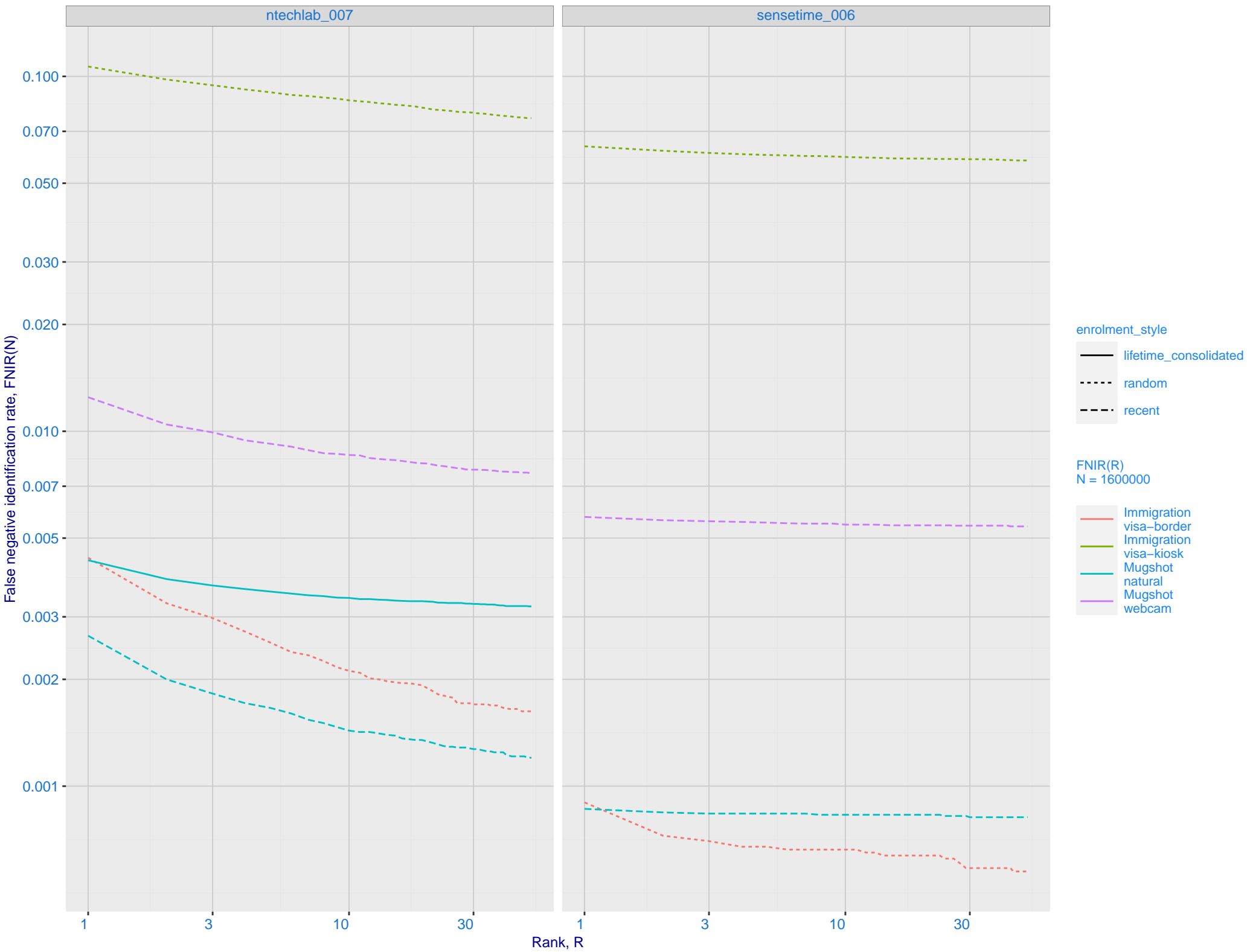G: FPIR dependence on T by probe type for N = 1600000 subjects

J: DET for Mugshot natural images and various N. Links connect points of equal threshold.
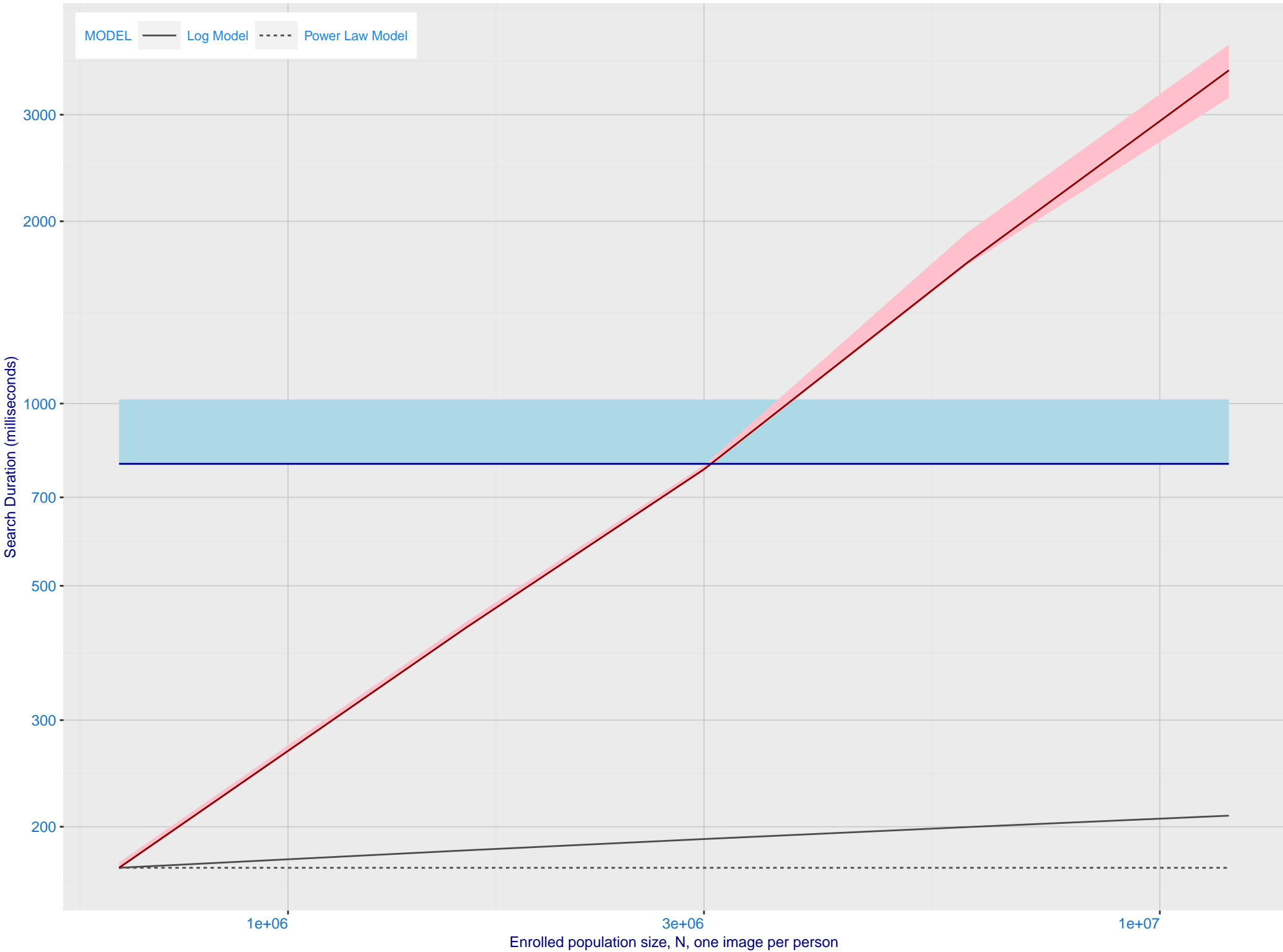
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006)

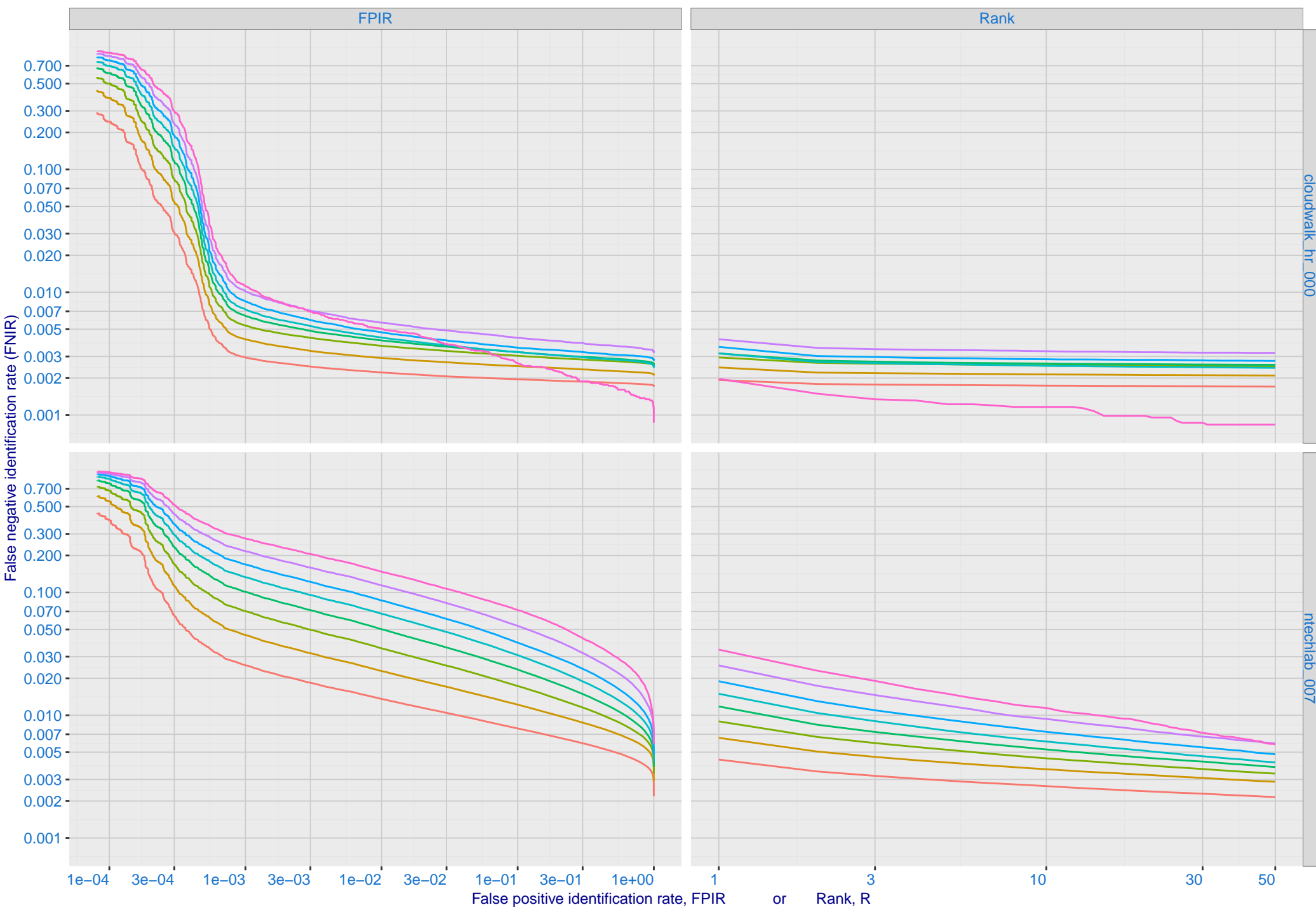L: Investigational mode: FNIR(1600000, R, 0) by probe type

M: 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

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

R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines