A: Datasheet

Algorithm: neurotechnology_3

Developer: Neurotechnology

Submission Date: 2018_06_27

Template size: 2048 bytes

Template time (2.5 percentile): 526 msec

Template time (median): 540 msec

Template time (97.5 percentile): 590 msec

Investigation:

Frontal mugshot ranking 165 (out of 259) –– FNIR(1600000, 0, 1) = 0.0225 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 132 (out of 221) –– FNIR(1600000, 0, 1) = 0.0417 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 148 (out of 190) –– FNIR(1600000, 0, 1) = 0.9605 vs. lowest 0.0591 from sensetime_005
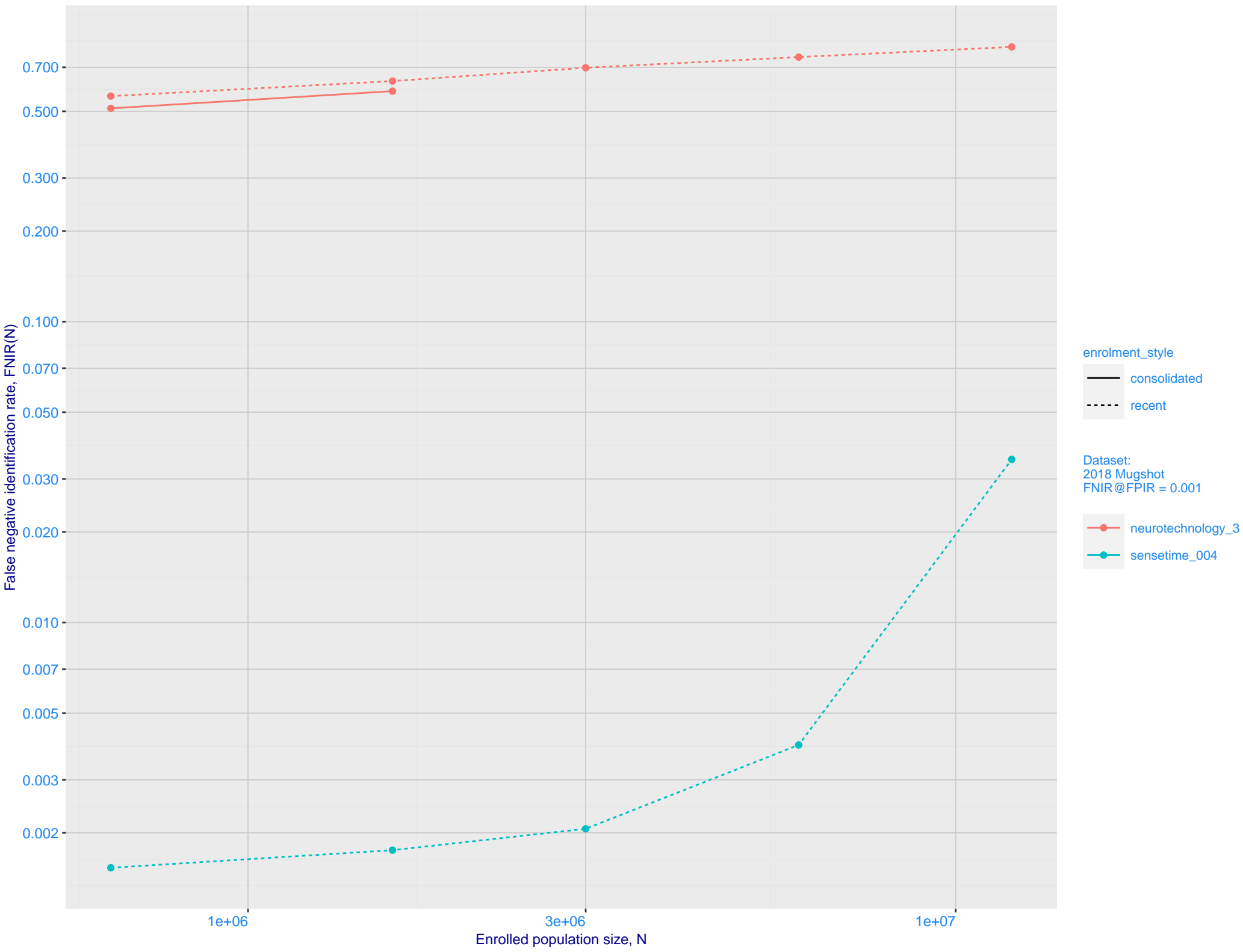
Identification:

Frontal mugshot ranking 226 (out of 259) –– FNIR(1600000, T, L+1) = 0.6299, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
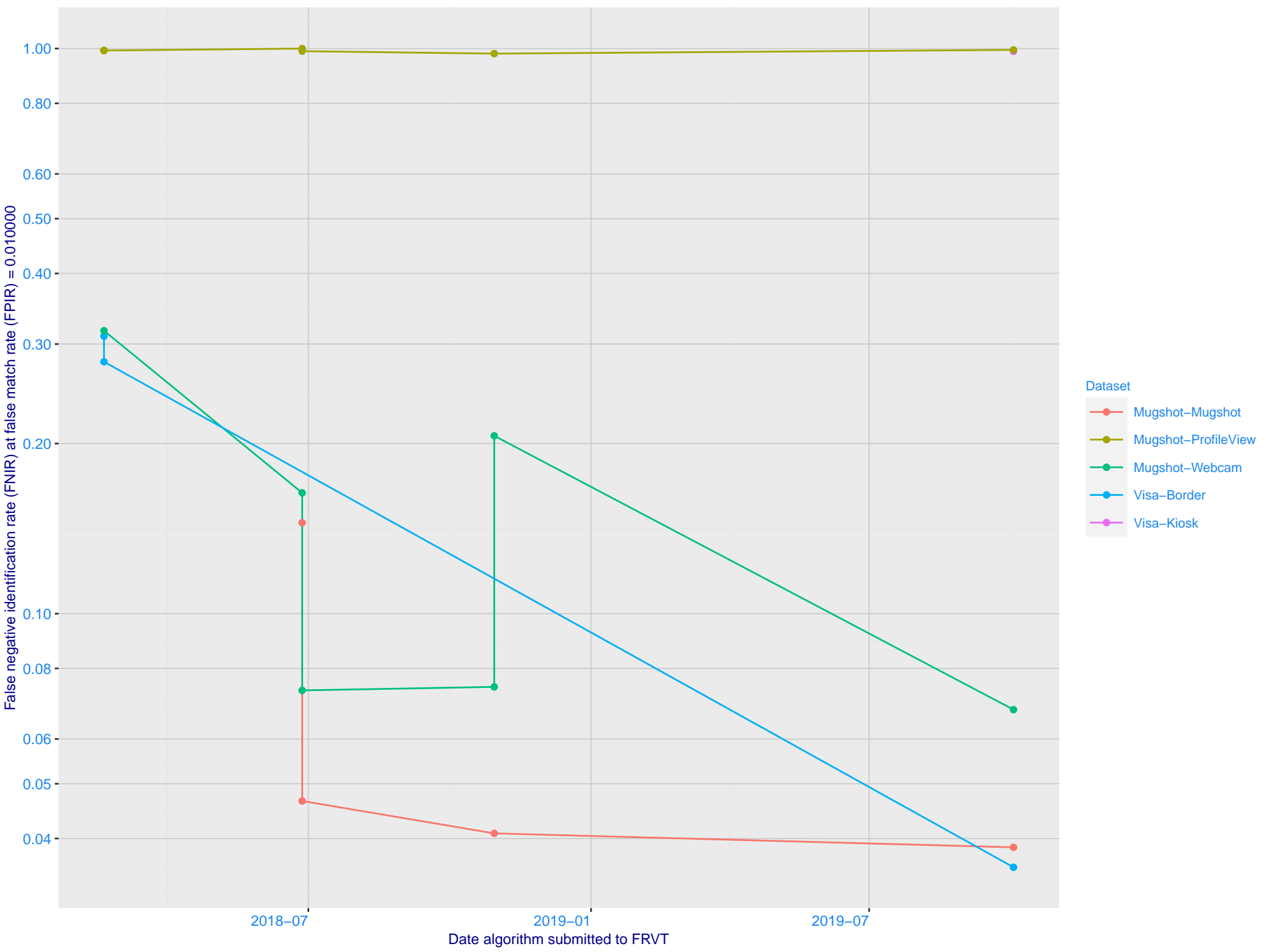
Mugshot webcam ranking 144 (out of 219) –– FNIR(1600000, T, L+1) = 0.2661, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 186 (out of 189) –– FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005
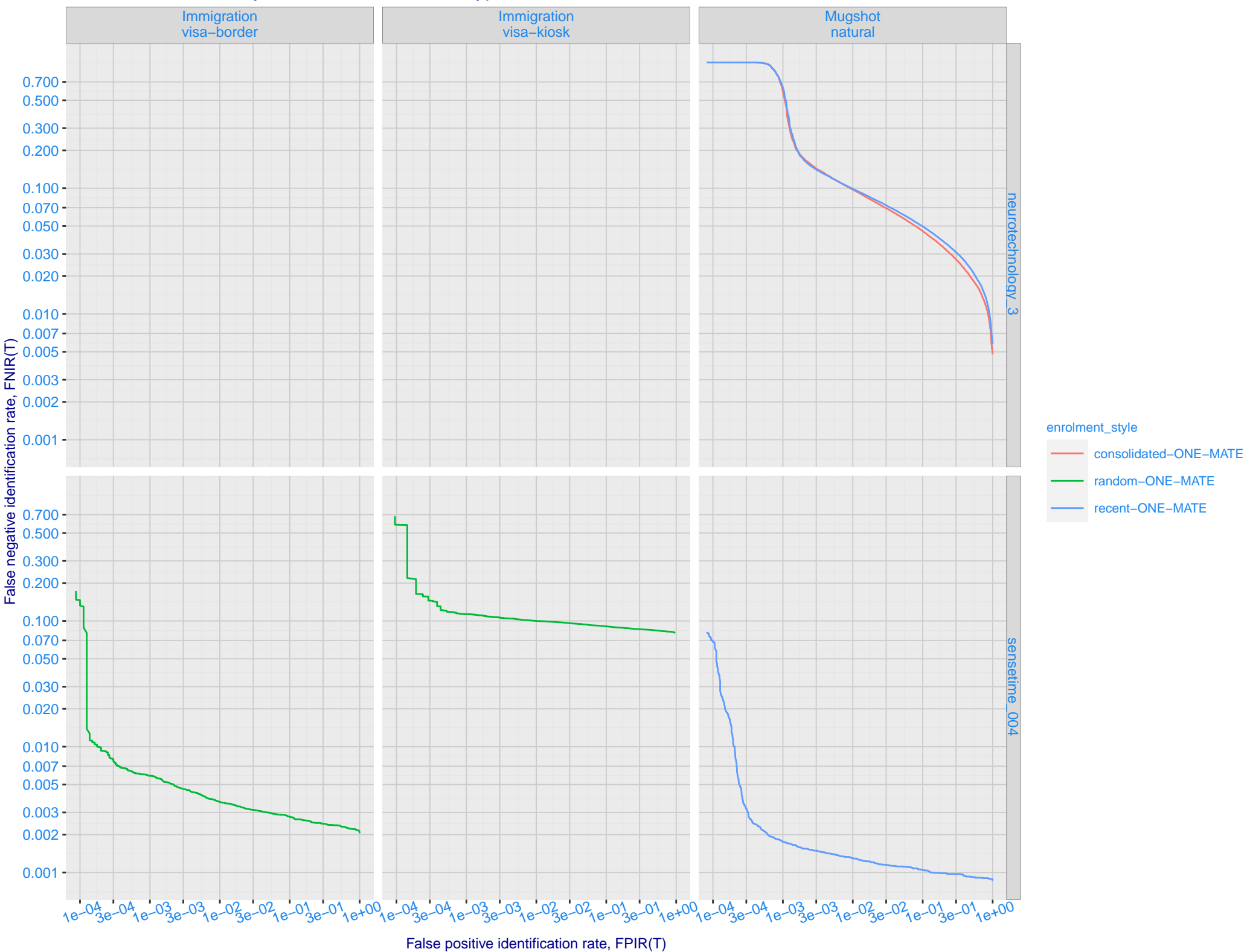
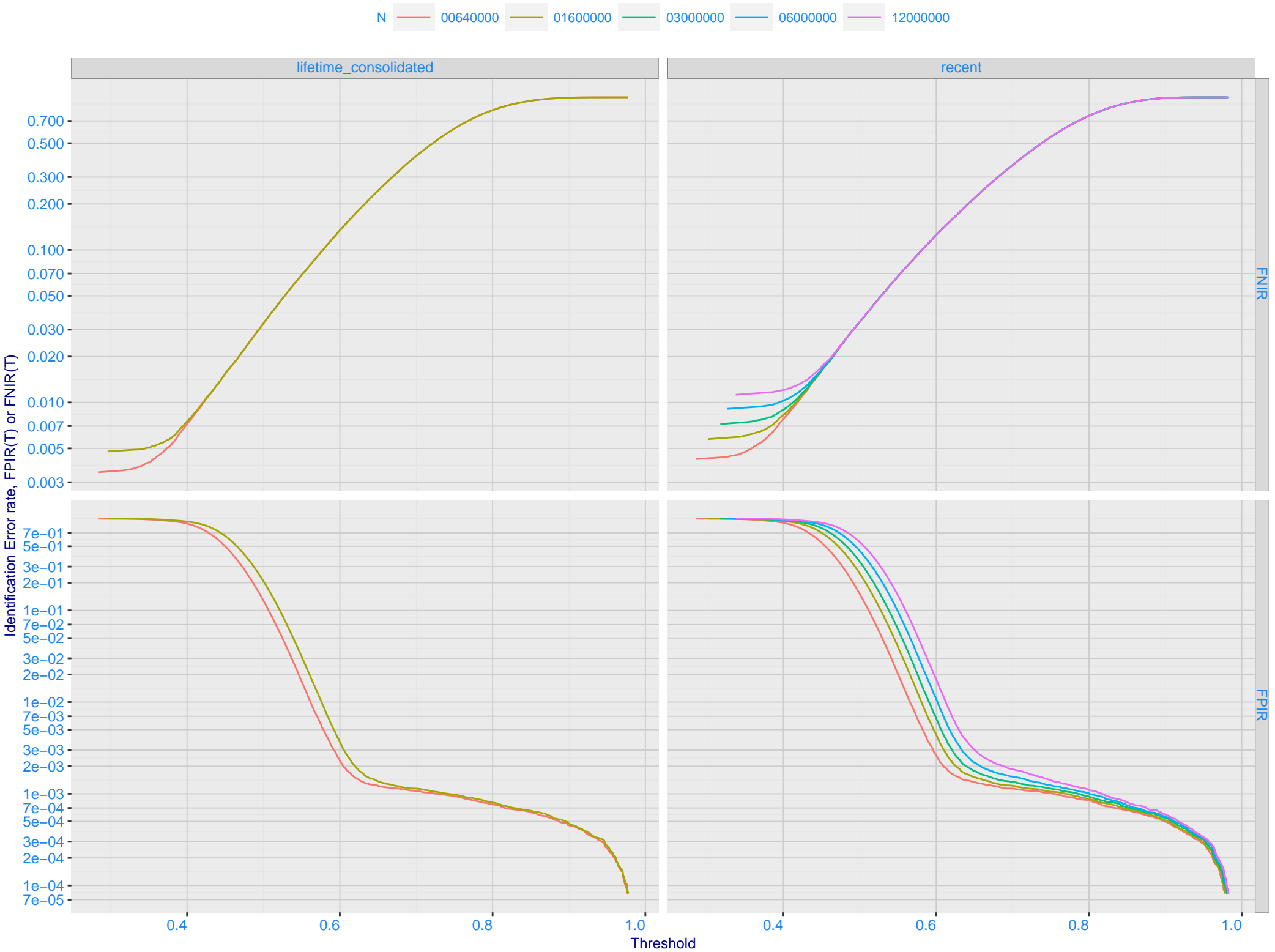B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

C: Evolution of accuracy for NEUROTECHNOLOGY algorithms on three datasets 2018 – present
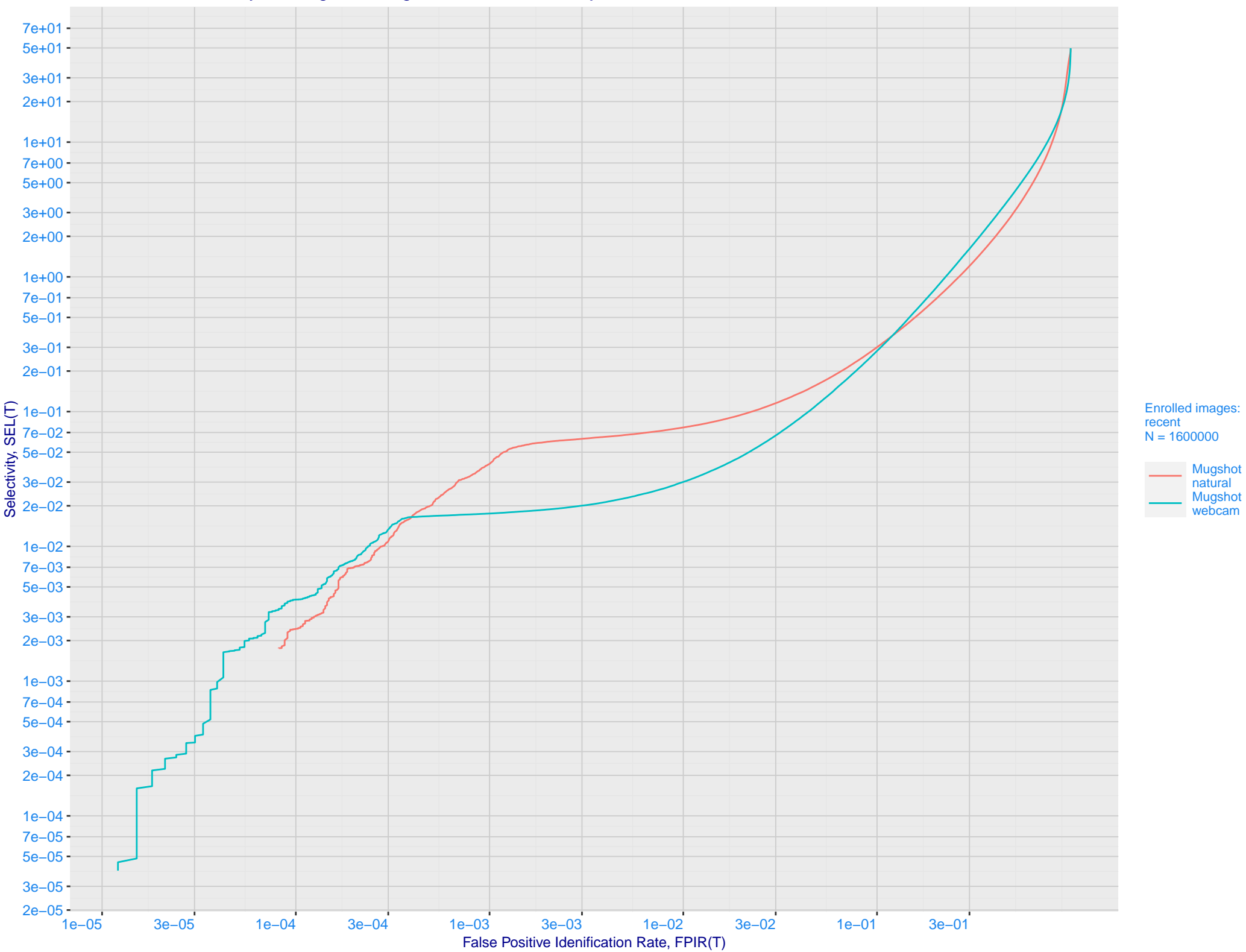
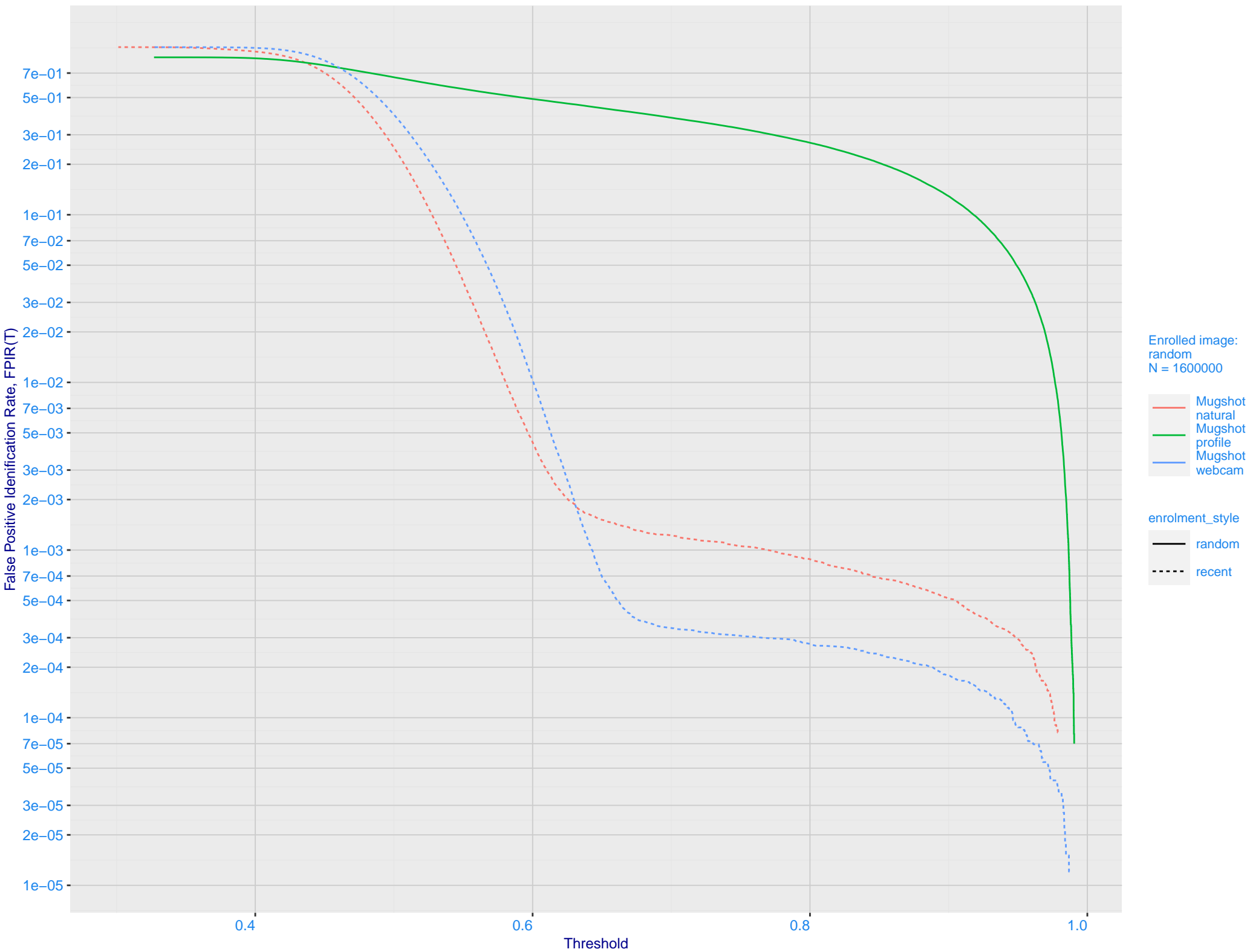D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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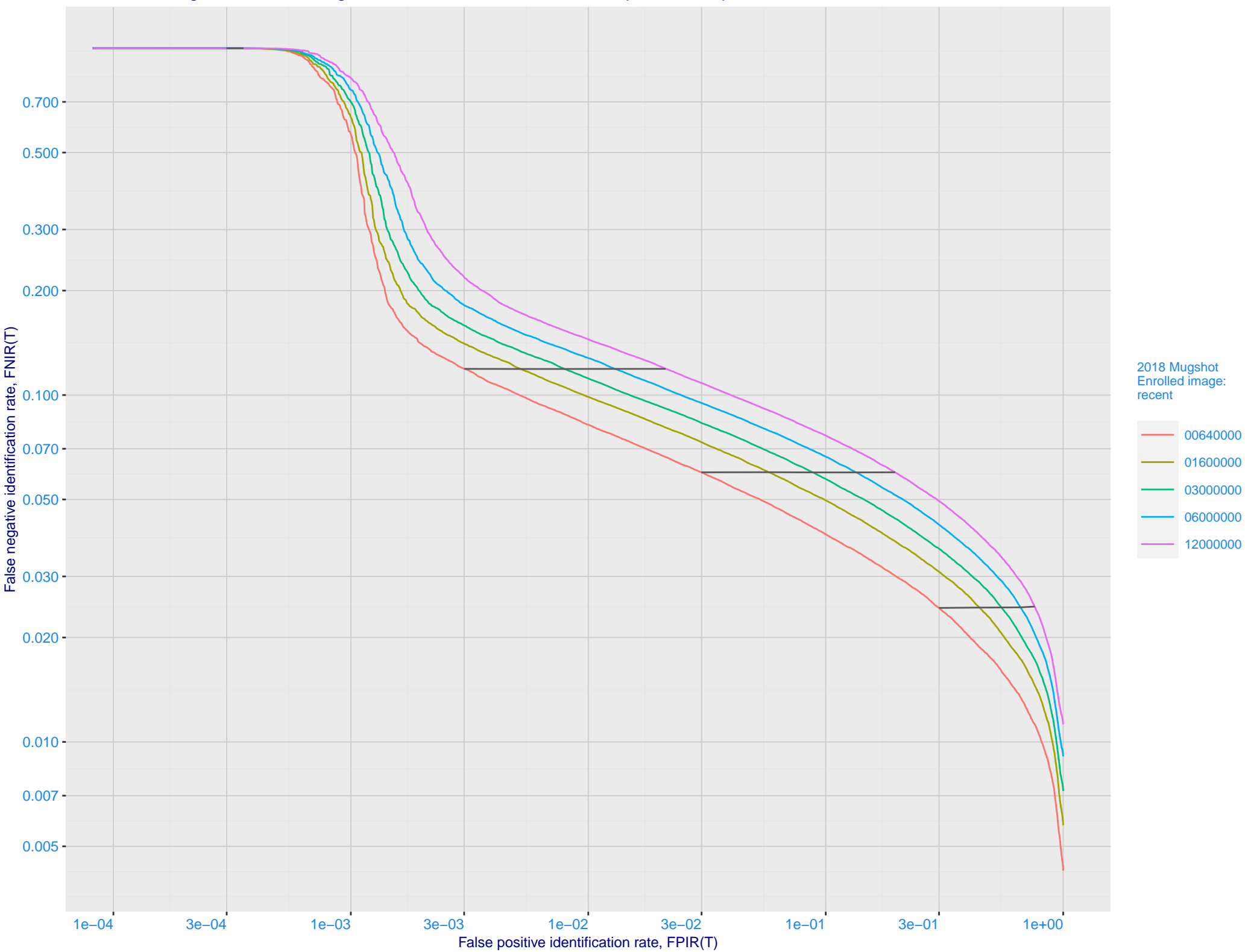
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
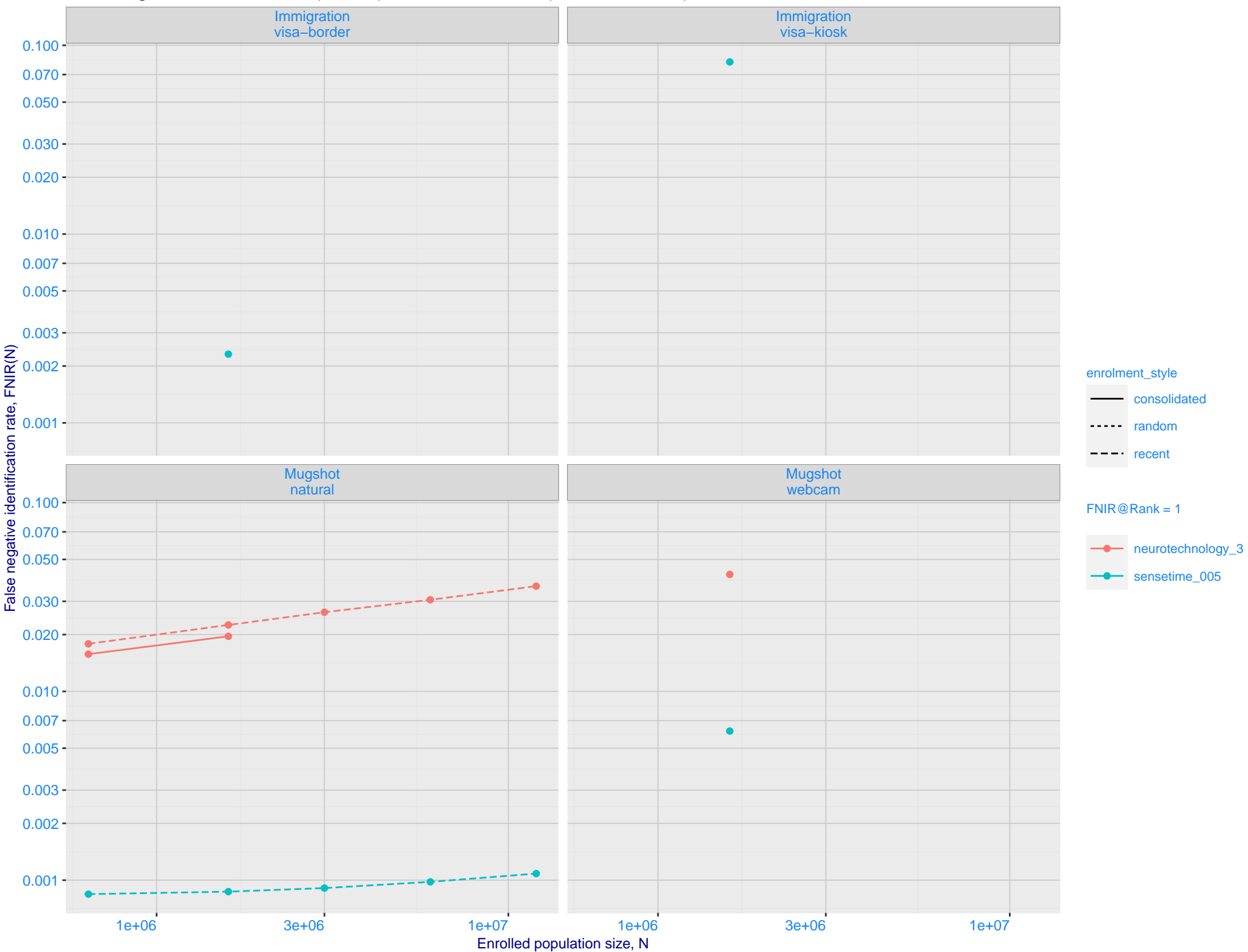
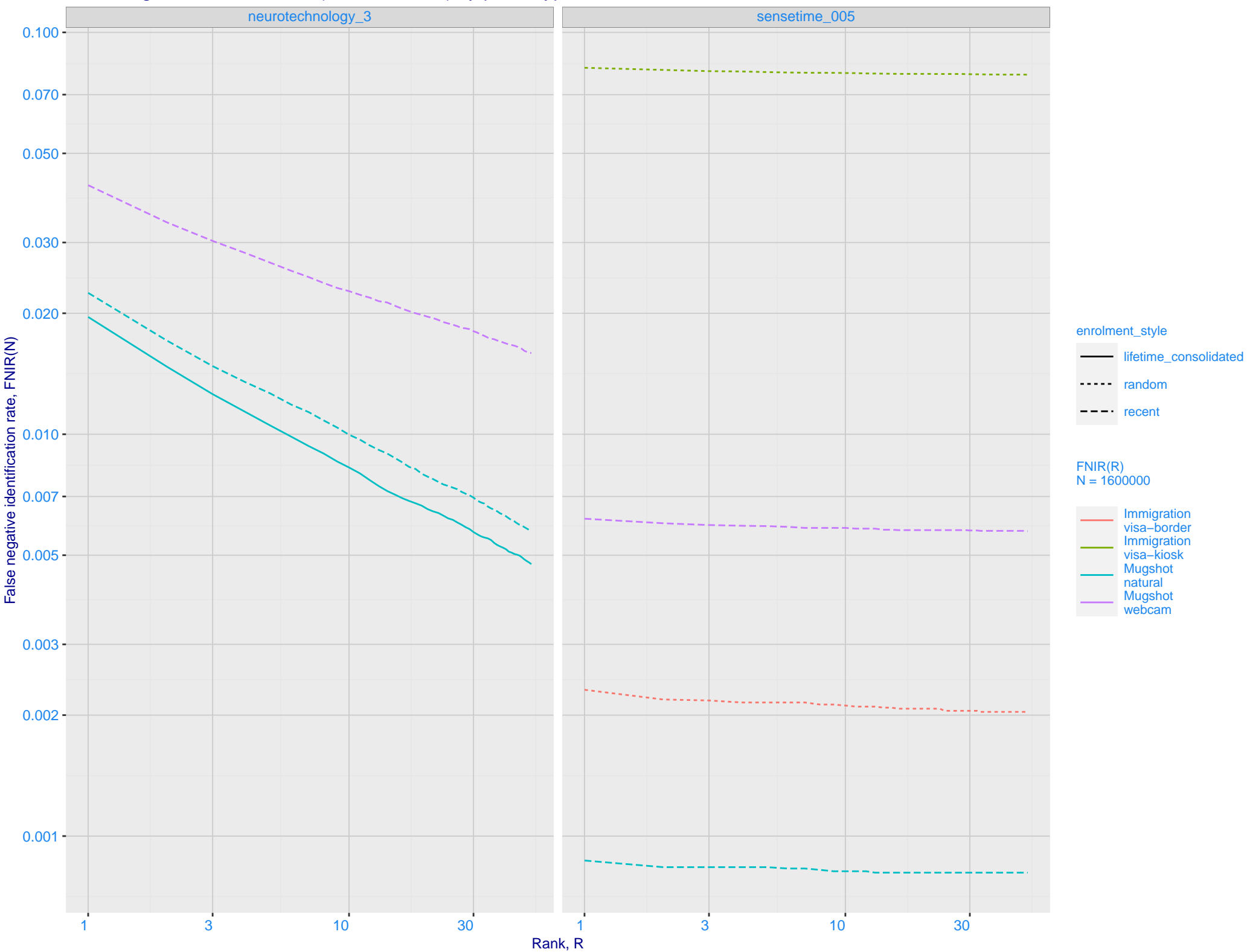G: FPIR dependence on T by probe type for N = 1600000 subjects

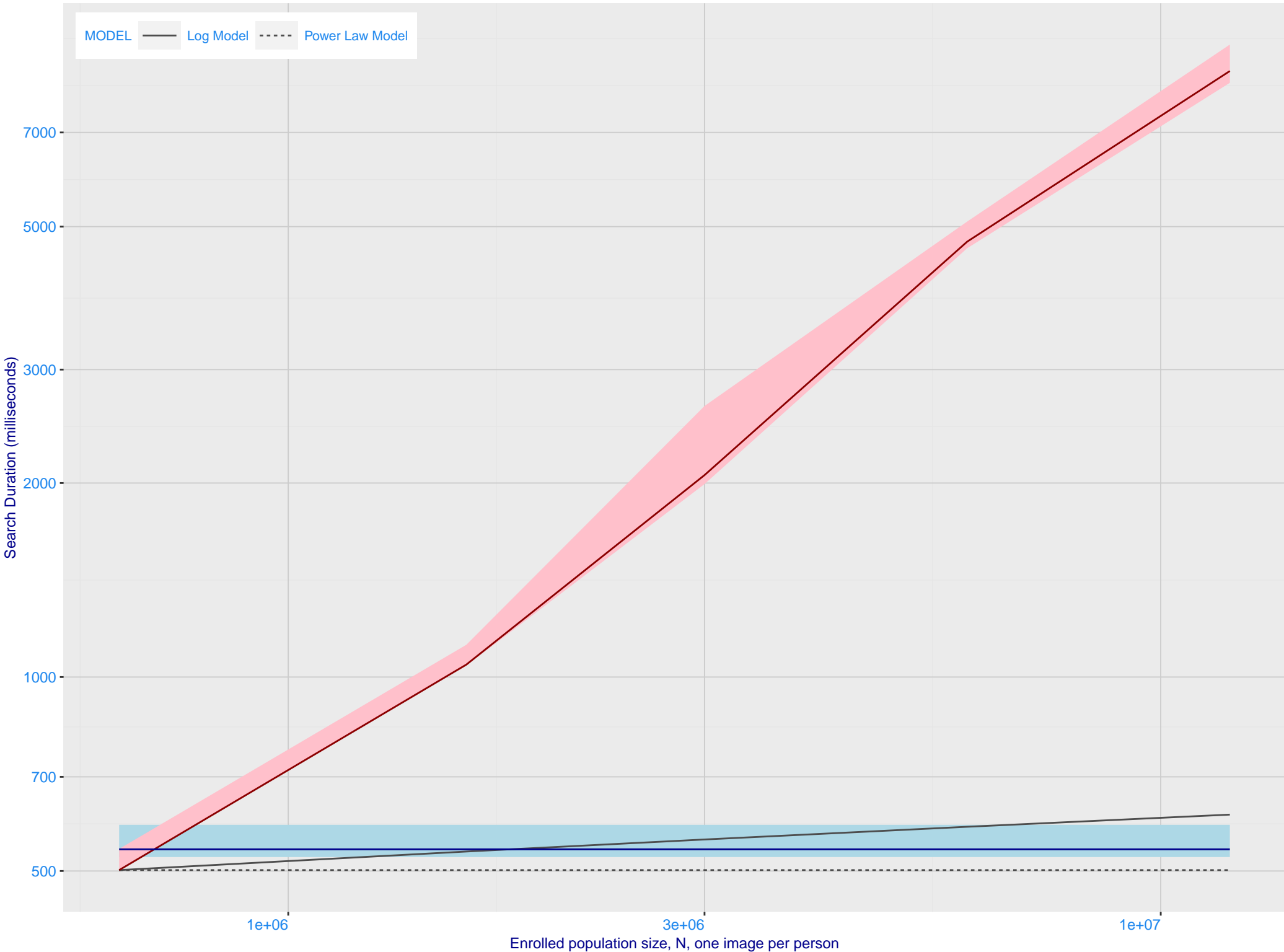H: DET for Mugshot natural images and various N. Links connect points of equal threshold.

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

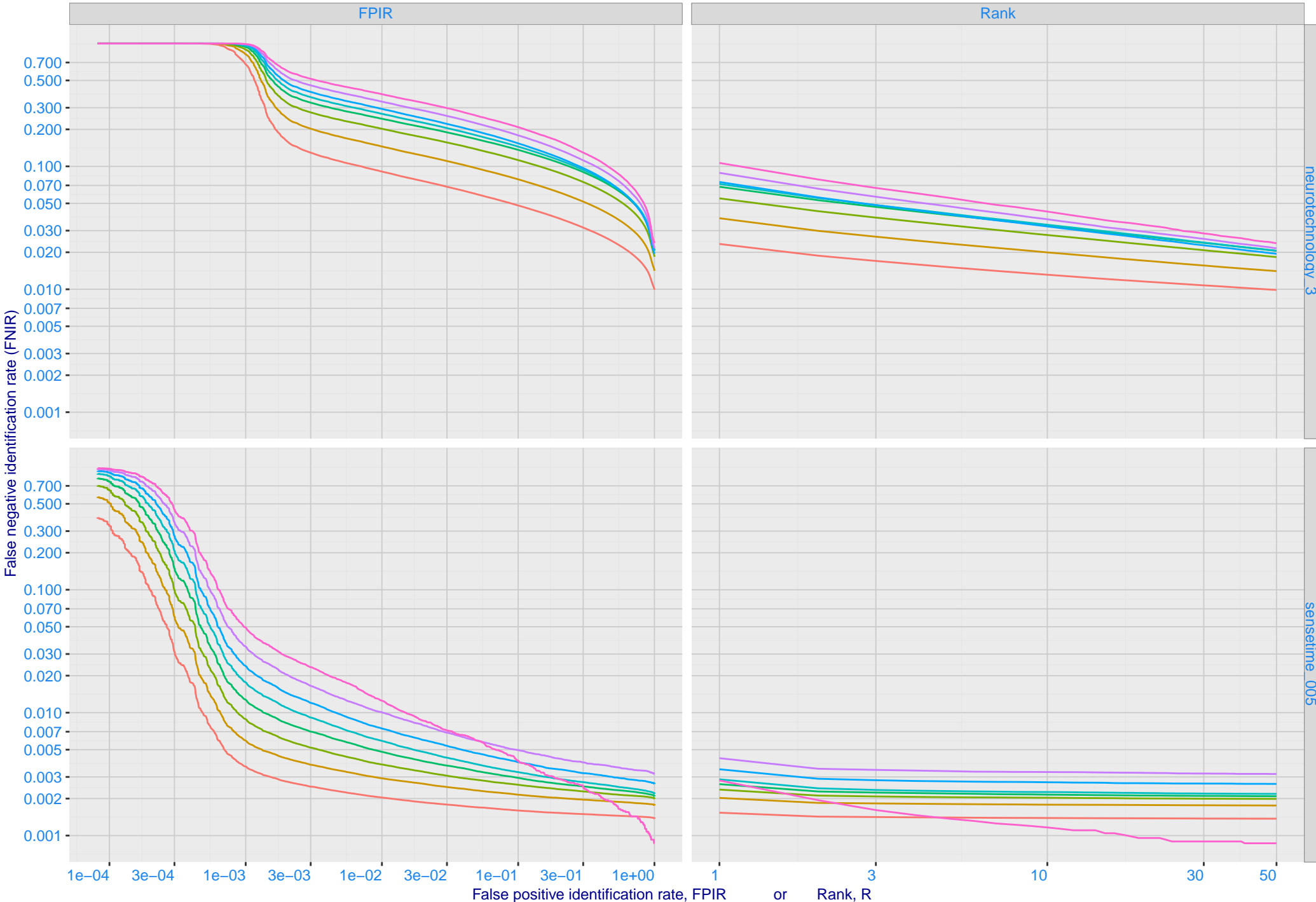J: Investigational mode: FNIR(1600000, R, 0) by probe type

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

N: Decline of genuine scores with ageing

Score

Time lapse between search and initial encounter enrollment (years)

(00,02] (02,04] (04,06] (06,08] (08,10] (10,12] (12,14] (14,18]

Dataset:
2018 Mugshot
N= 3.1M
FNIR (Rank = 1)

0.20
0.15
0.10
0.05
0.00

TVAL

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