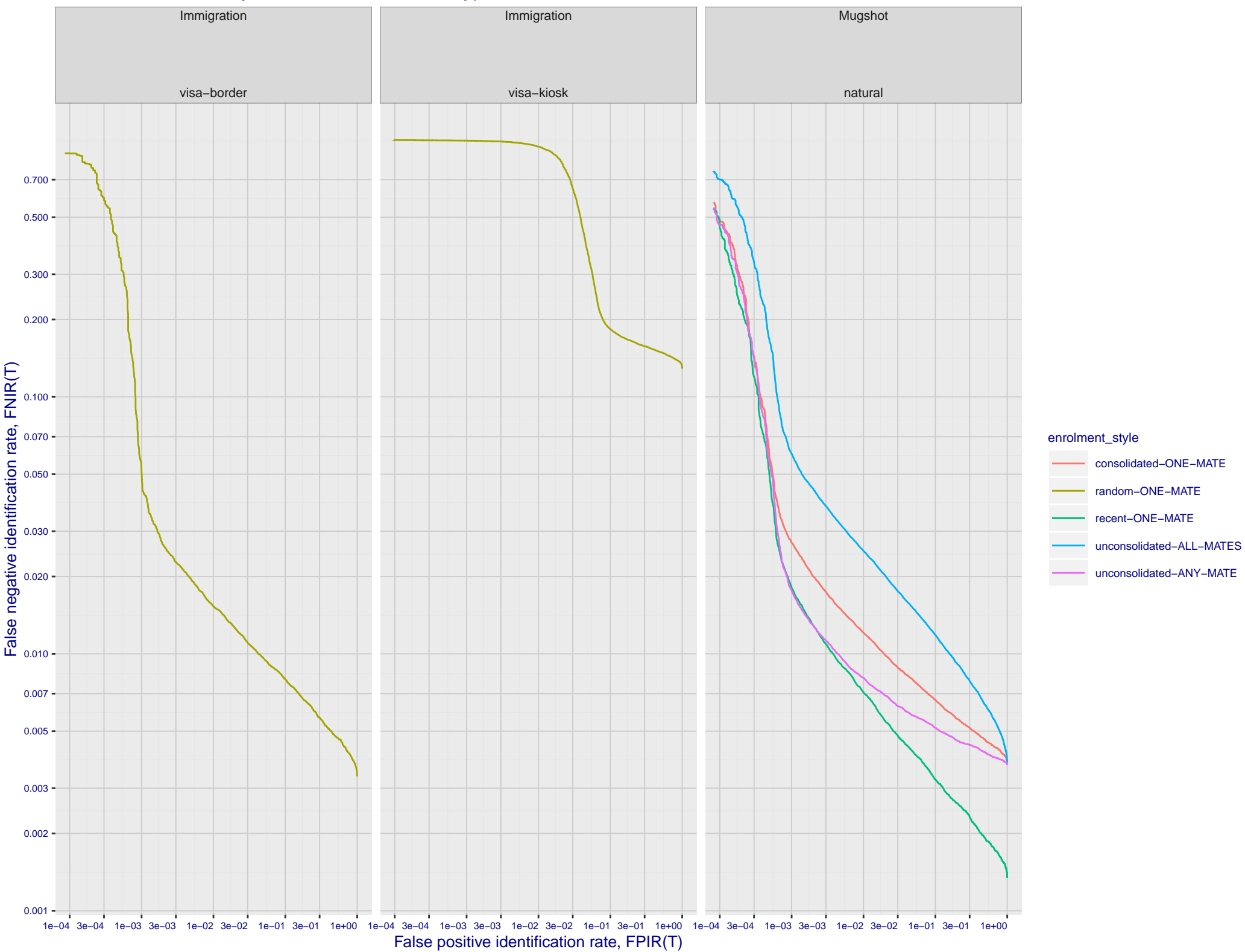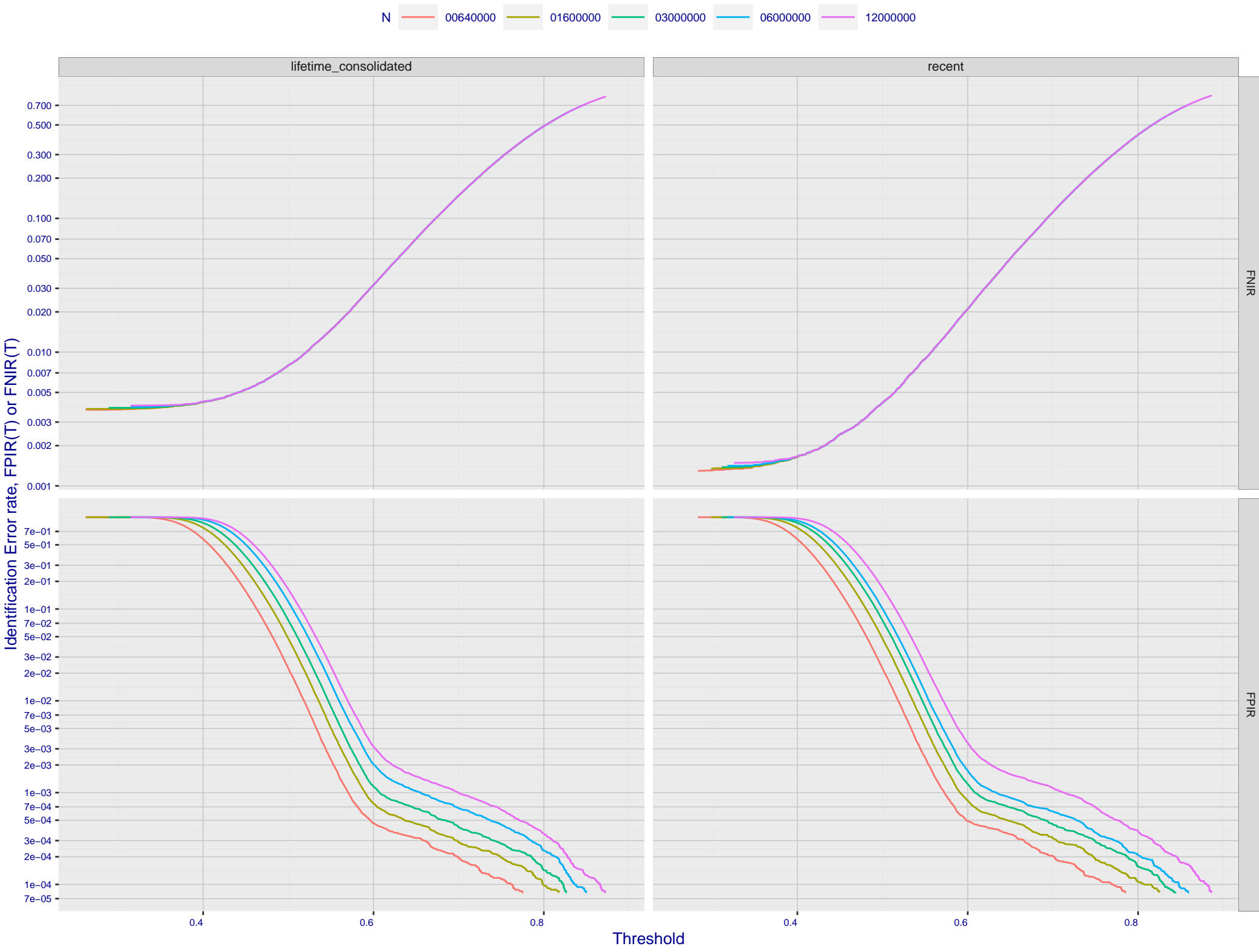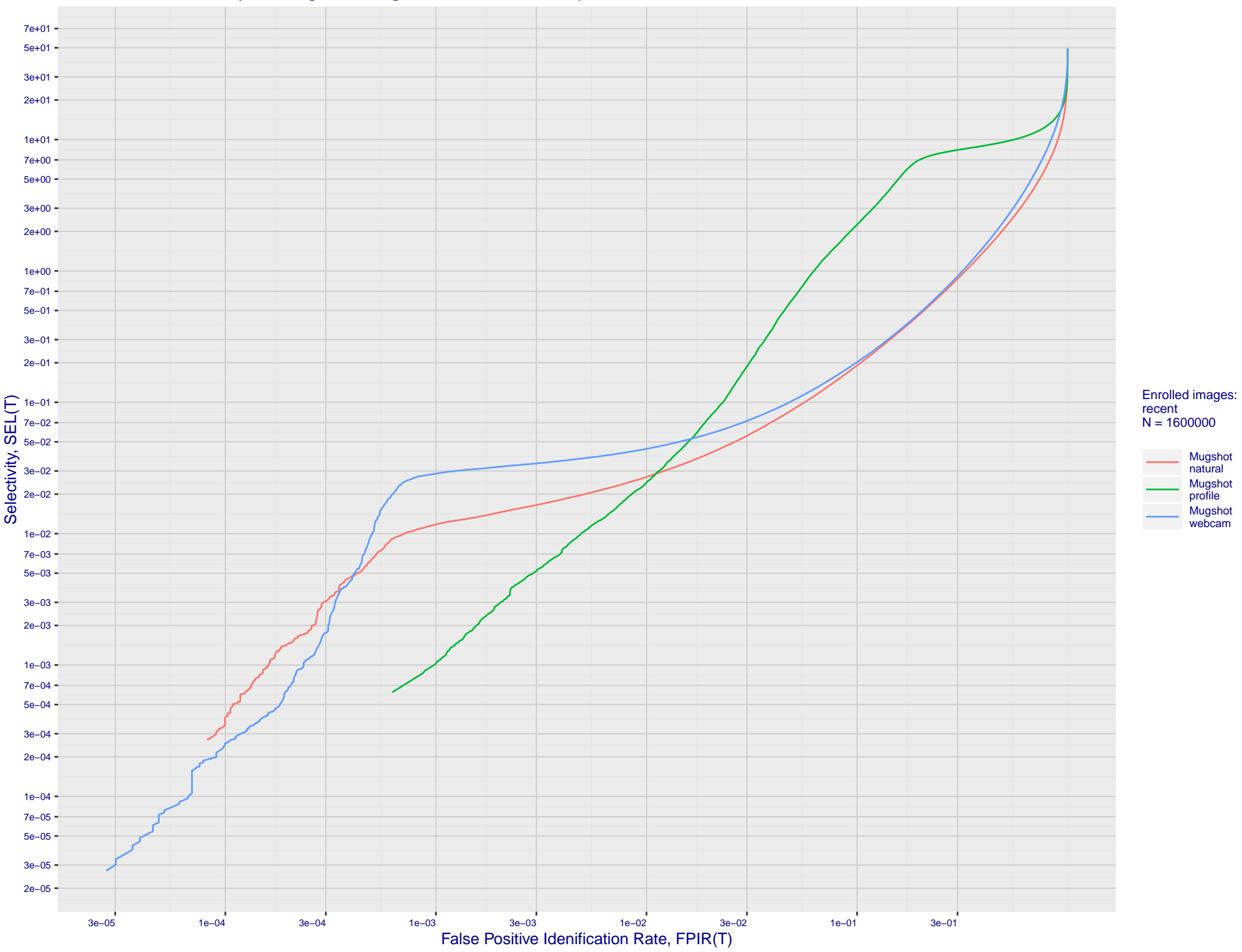A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
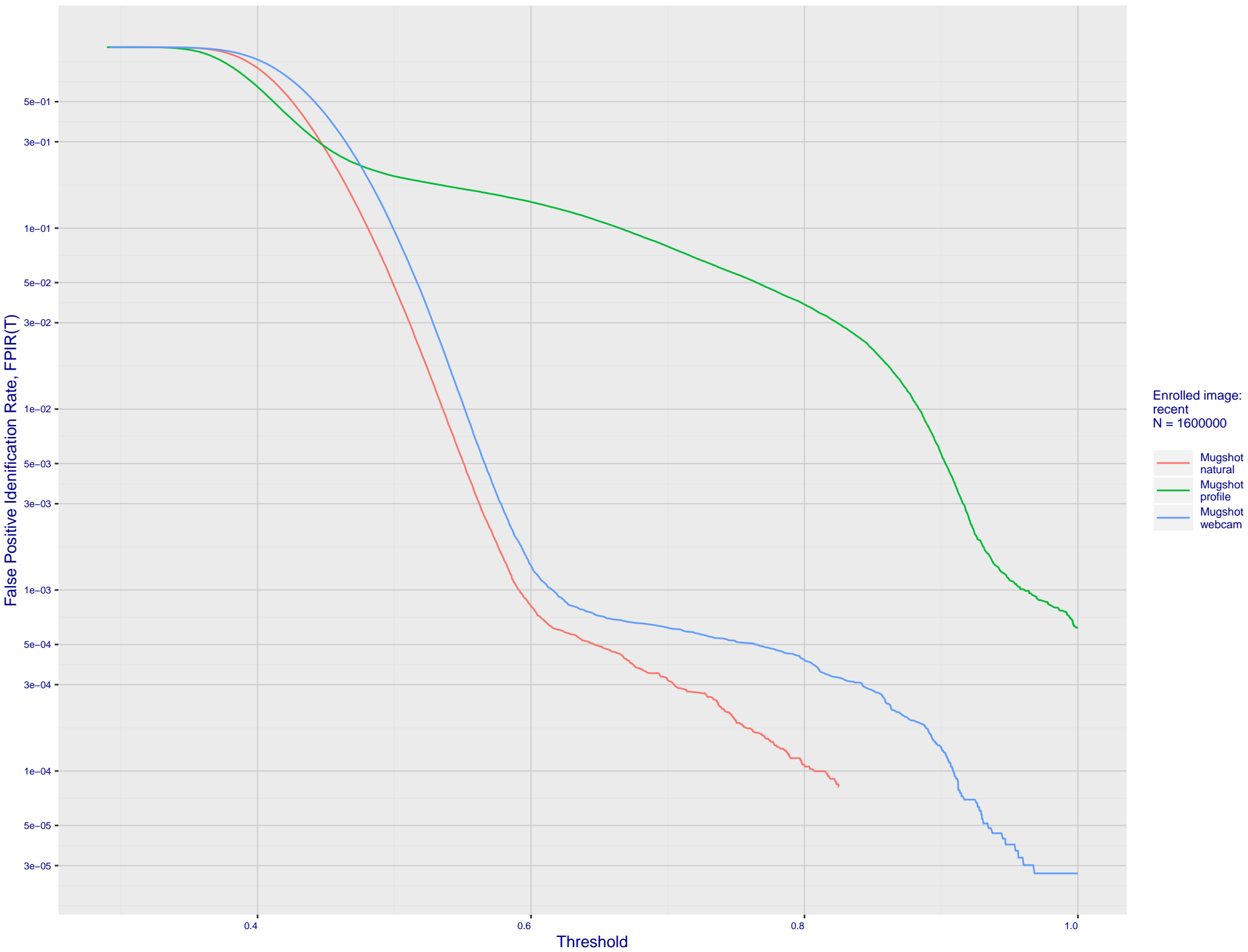
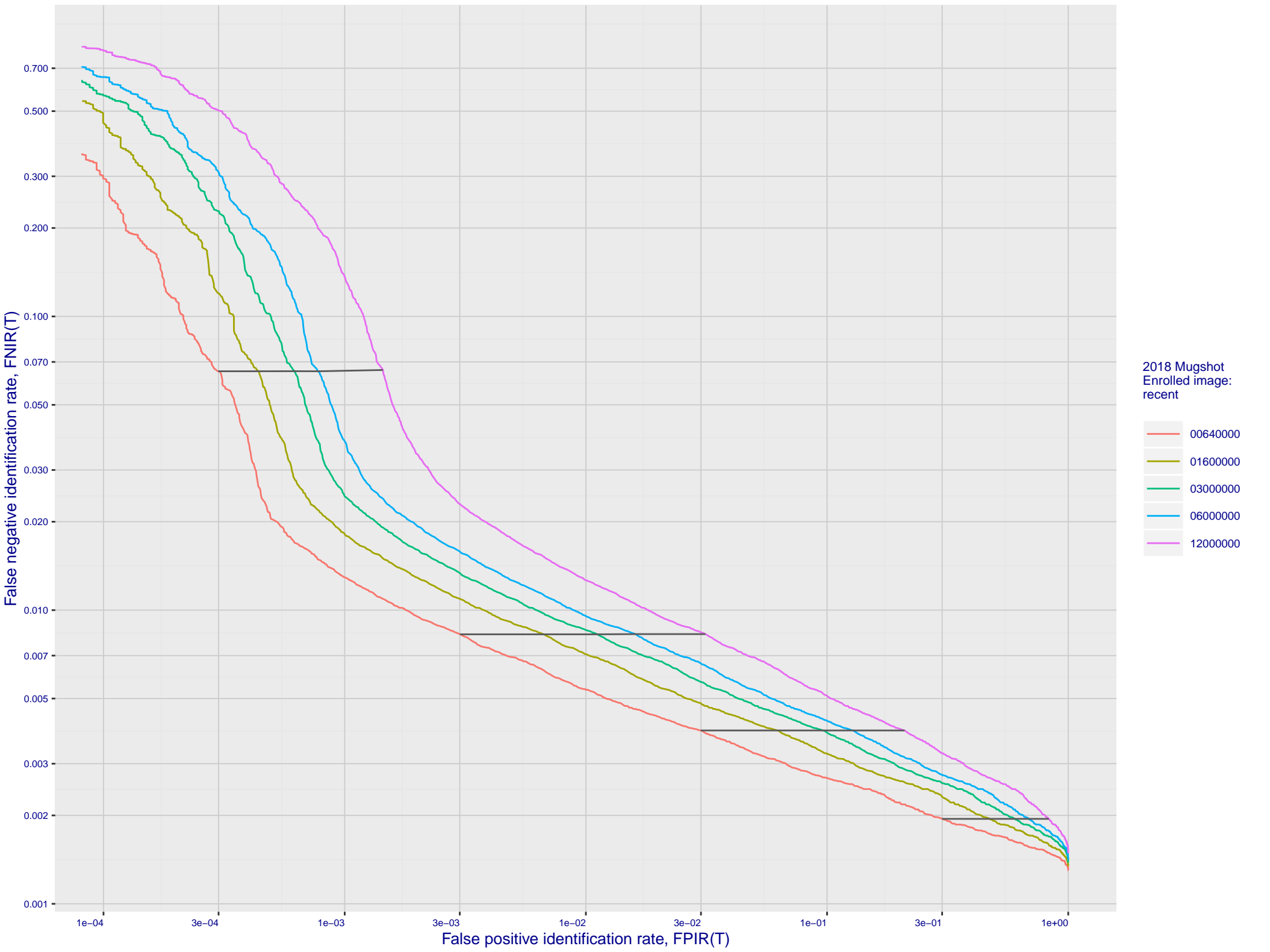B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

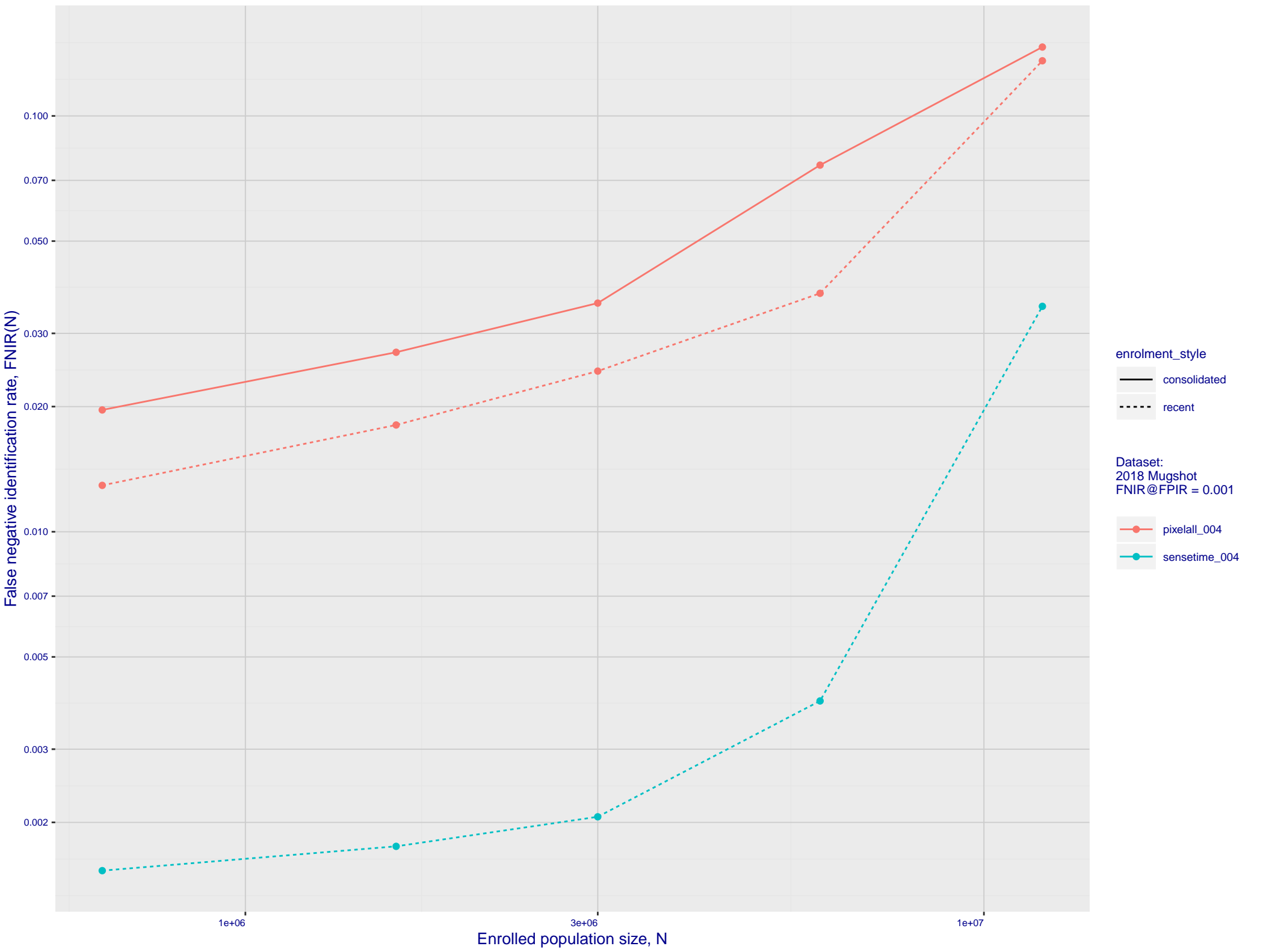C: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

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: pixelall_004

Developer: Guangzhou Pixel Solutions Co Ltd

Submission Date: 2020_07_02

Template size: 2560 bytes

Template time (2.5 percentile): 437 msec

Template time (median): 449 msec

Template time (97.5 percentile): 479 msec

Frontal mugshot investigation rank 24 –– FNIR(1600000, 0, 1) = 0.0020 vs. lowest 0.0010 from sensetime_004

natural investigation rank 30 –– FNIR(1600000, 0, 1) = 0.0145 vs. lowest 0.0067 from sensetime_003

natural investigation rank 78 –– FNIR(1600000, 0, 1) = 0.3923 vs. lowest 0.0492 from paravision_005

natural investigation rank 78 –– FNIR(1600000, 0, 1) = 0.3923 vs. lowest 0.0492 from paravision_005

natural investigation rank 29 –– FNIR(1600000, 0, 1) = 0.0054 vs. lowest 0.0014 from visionlabs_009

natural investigation rank 51 –– FNIR(1600000, 0, 1) = 0.1517 vs. lowest 0.0694 from cib_000

Frontal mugshot identification rank 24 –– FNIR(1600000, T, L+1) = 0.0181 vs. lowest 0.0018 from sensetime_004
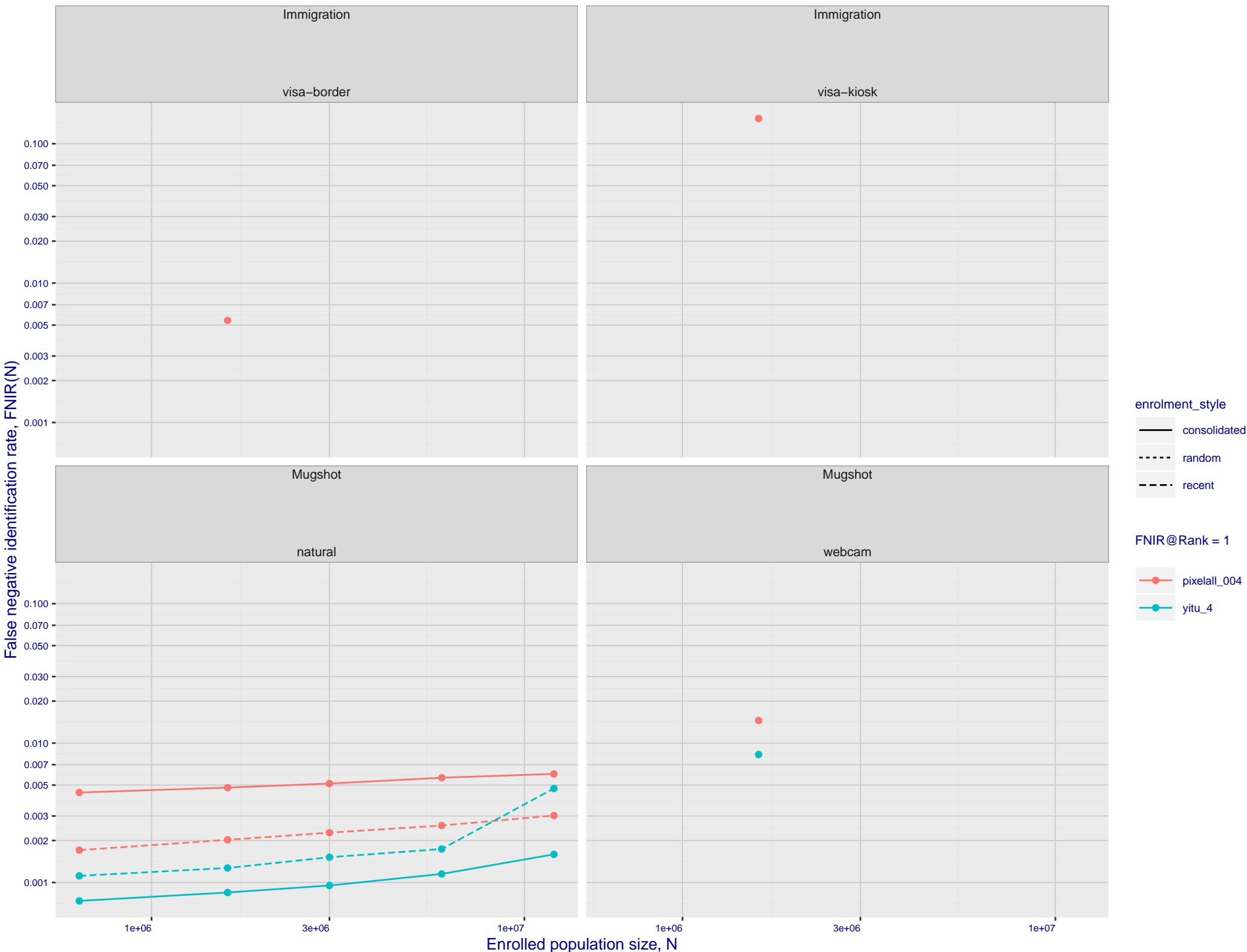
natural identification rank 34 –– FNIR(1600000, T, L+1) = 0.0787 vs. lowest 0.0122 from sensetime_003

natural identification rank 158 –– FNIR(1600000, T, L+1) = 0.9999 vs. lowest 0.1020 from sensetime_004
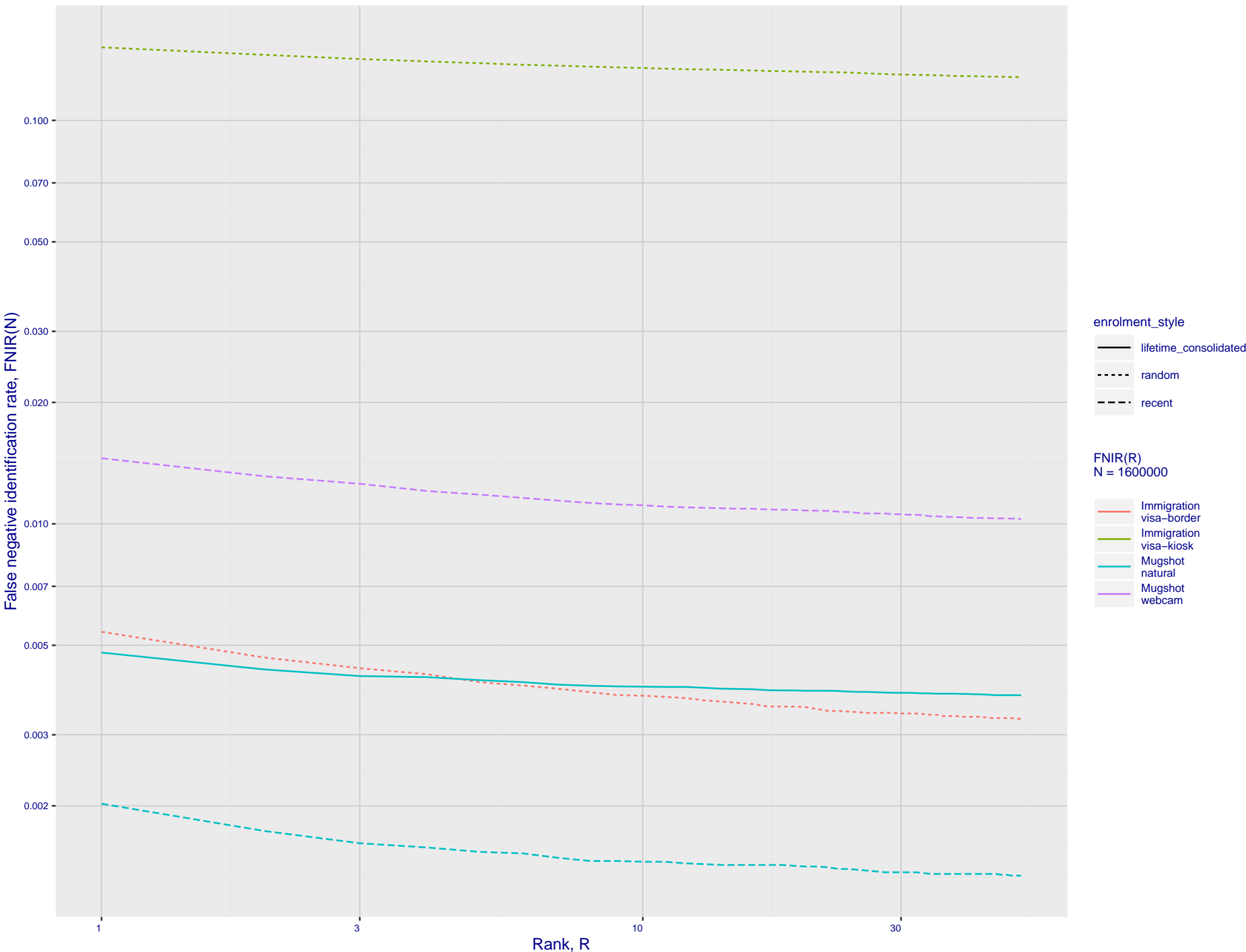
natural identification rank 31 –– FNIR(1600000, T, L+1) = 0.0508 vs. lowest 0.0059 from sensetime_004

natural identification rank 87 –– FNIR(1600000, T, L+1) = 0.9938 vs. lowest 0.1129 from visionlabs_009
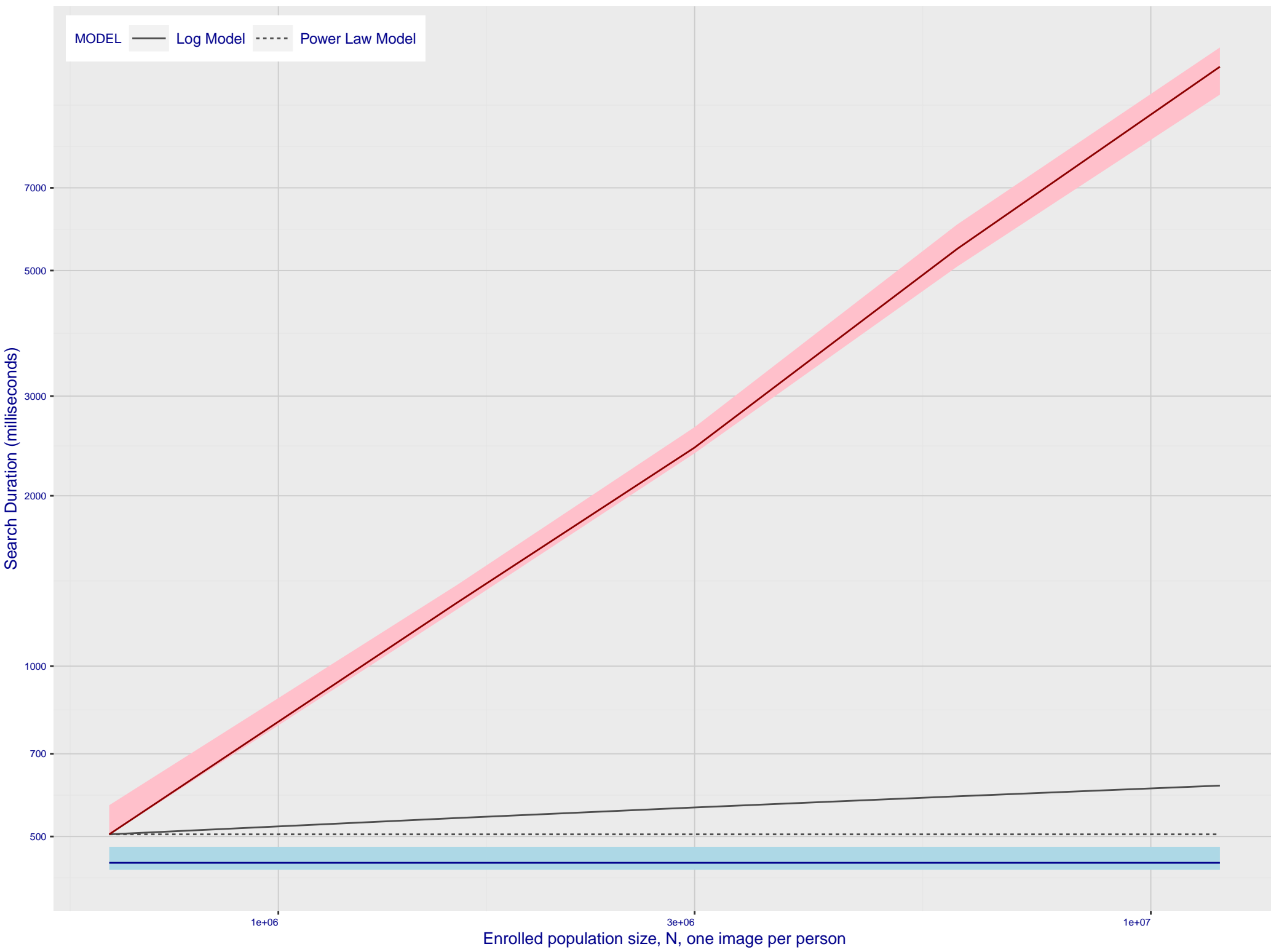
H: Investigational mode: FNIR(N, 1, 0) vs. most accurate (yitu_4)

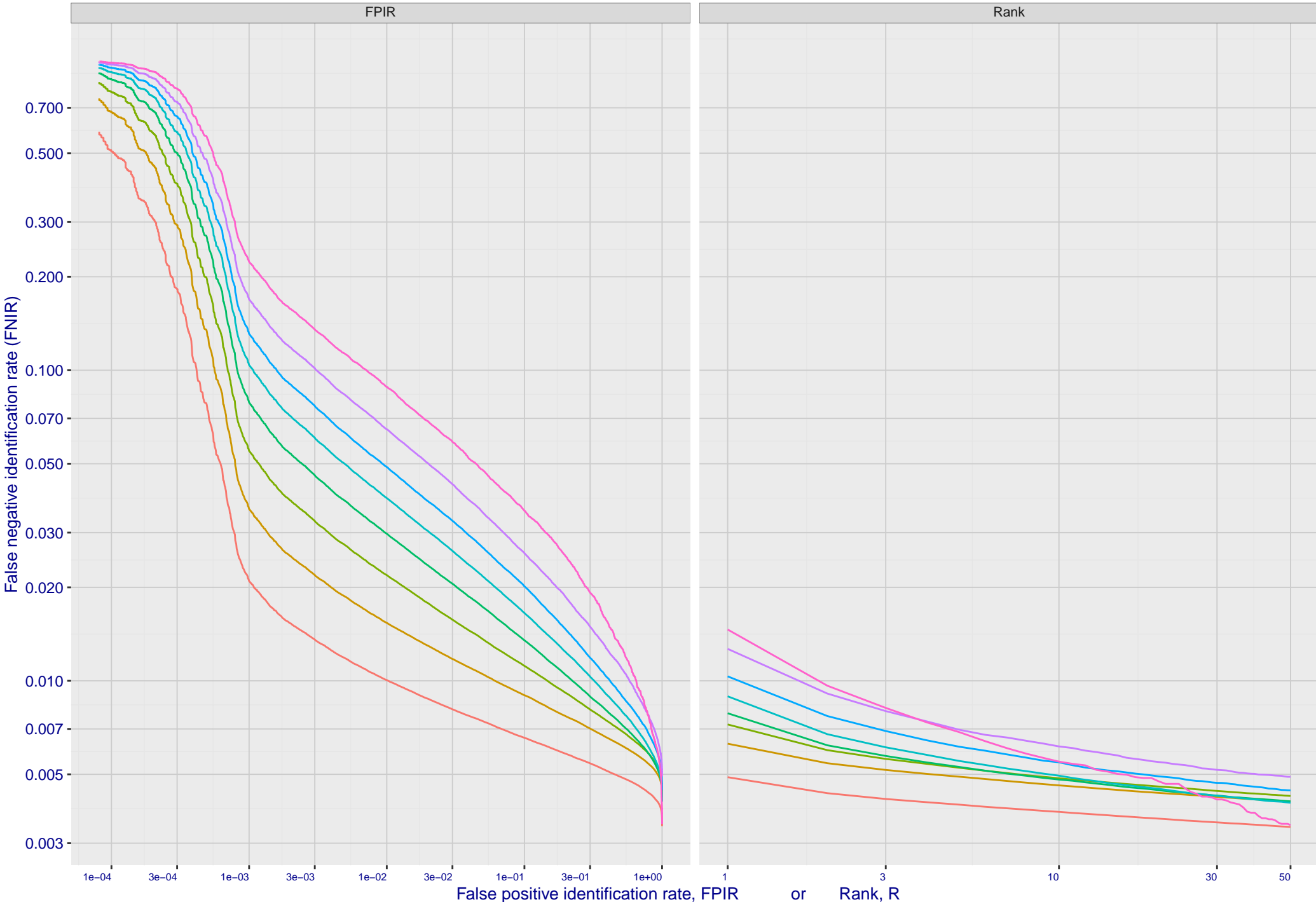I: Investigational mode: FNIR(1600000, R, 0) by probe type

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

MODEL —— Log Model ····· Power Law Model

Search Duration (milliseconds)

7000
5000
3000
2000
1000
700
500

1e+06   3e+06   1e+07

Enrolled population size, N, one image per person

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

Dataset: 2018 Mugshot   N = 3068801

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

FPIR

Rank

False negative identification rate (FNIR)

False positive identification rate, FPIR   or   Rank, R

N: Decline of genuine scores with ageing