A: Datasheet

Algorithm: everai_3

Developer: Paravision (EverAI)

Submission Date: 2018_10_30

Template size: 2048 bytes

Template time (2.5 percentile): 716 msec

Template time (median): 717 msec

Template time (97.5 percentile): 794 msec

Investigation:

Frontal mugshot ranking 63 (out of 279) –– FNIR(1600000, 0, 1) = 0.0031 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 80 (out of 241) –– FNIR(1600000, 0, 1) = 0.0194 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 29 (out of 210) –– FNIR(1600000, 0, 1) = 0.2523 vs. lowest 0.0587 from xforwardai_002

Immigration visa–border ranking 85 (out of 168) –– FNIR(1600000, 0, 1) = 0.0154 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 81 (out of 165) –– FNIR(1600000, 0, 1) = 0.1667 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

Frontal mugshot ranking 66 (out of 279) –– FNIR(1600000, T, L+1) = 0.0349, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
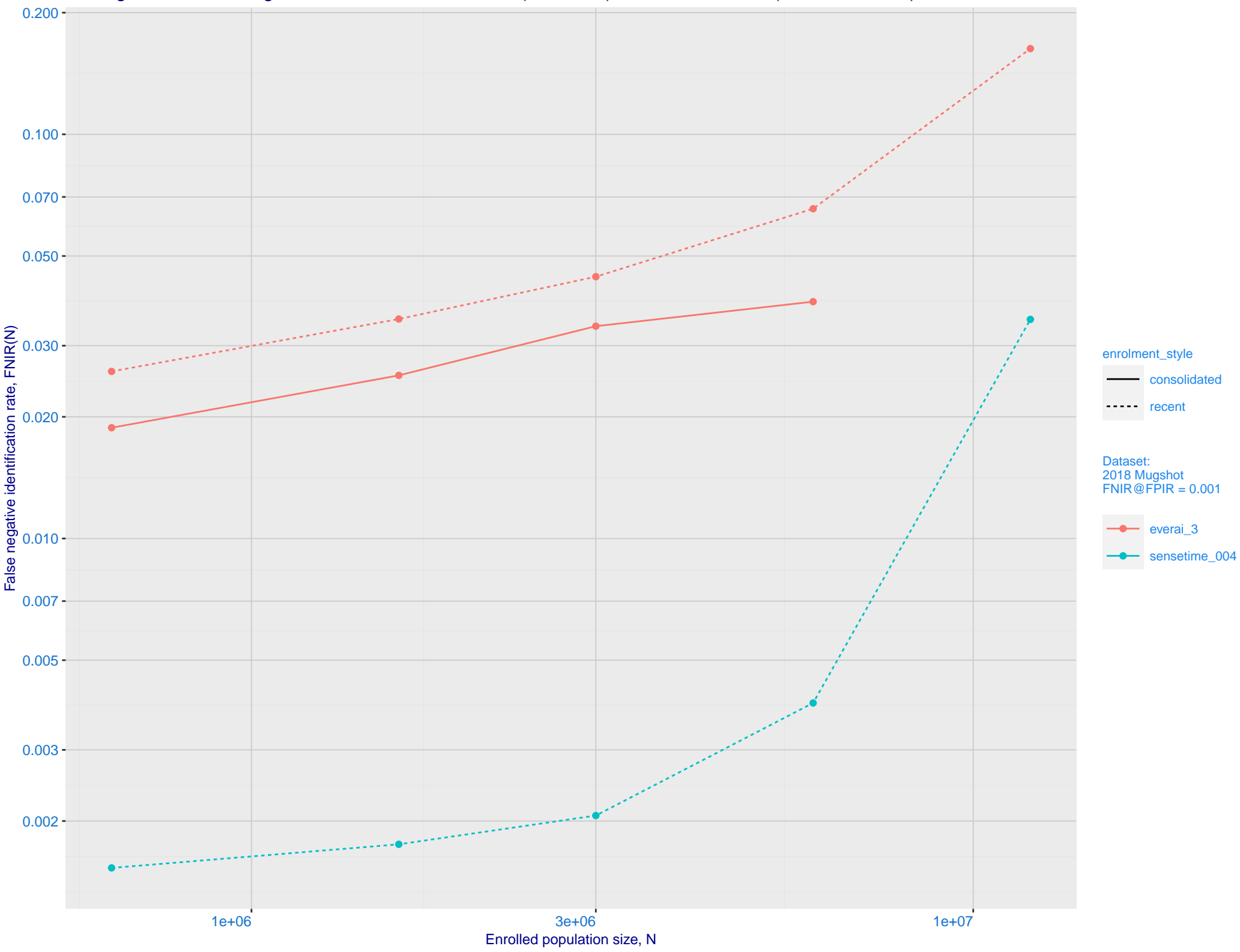
Mugshot webcam ranking 70 (out of 236) –– FNIR(1600000, T, L+1) = 0.0955, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 100 (out of 209) –– FNIR(1600000, T, L+1) = 0.9943, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000
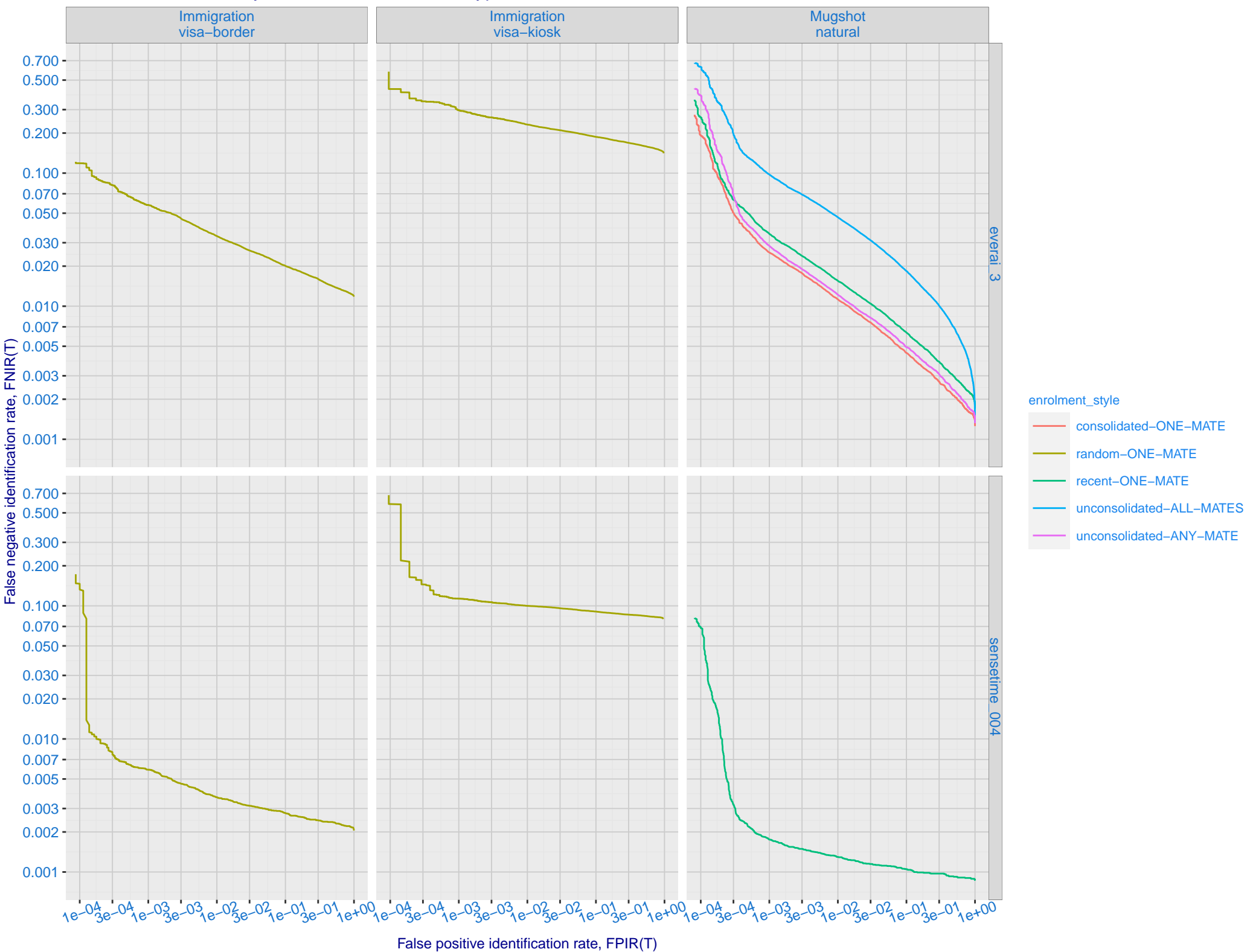
Immigration visa–border ranking 59 (out of 167) –– FNIR(1600000, T, L+1) = 0.0575, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa–kiosk ranking 42 (out of 162) –– FNIR(1600000, T, L+1) = 0.2978, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000
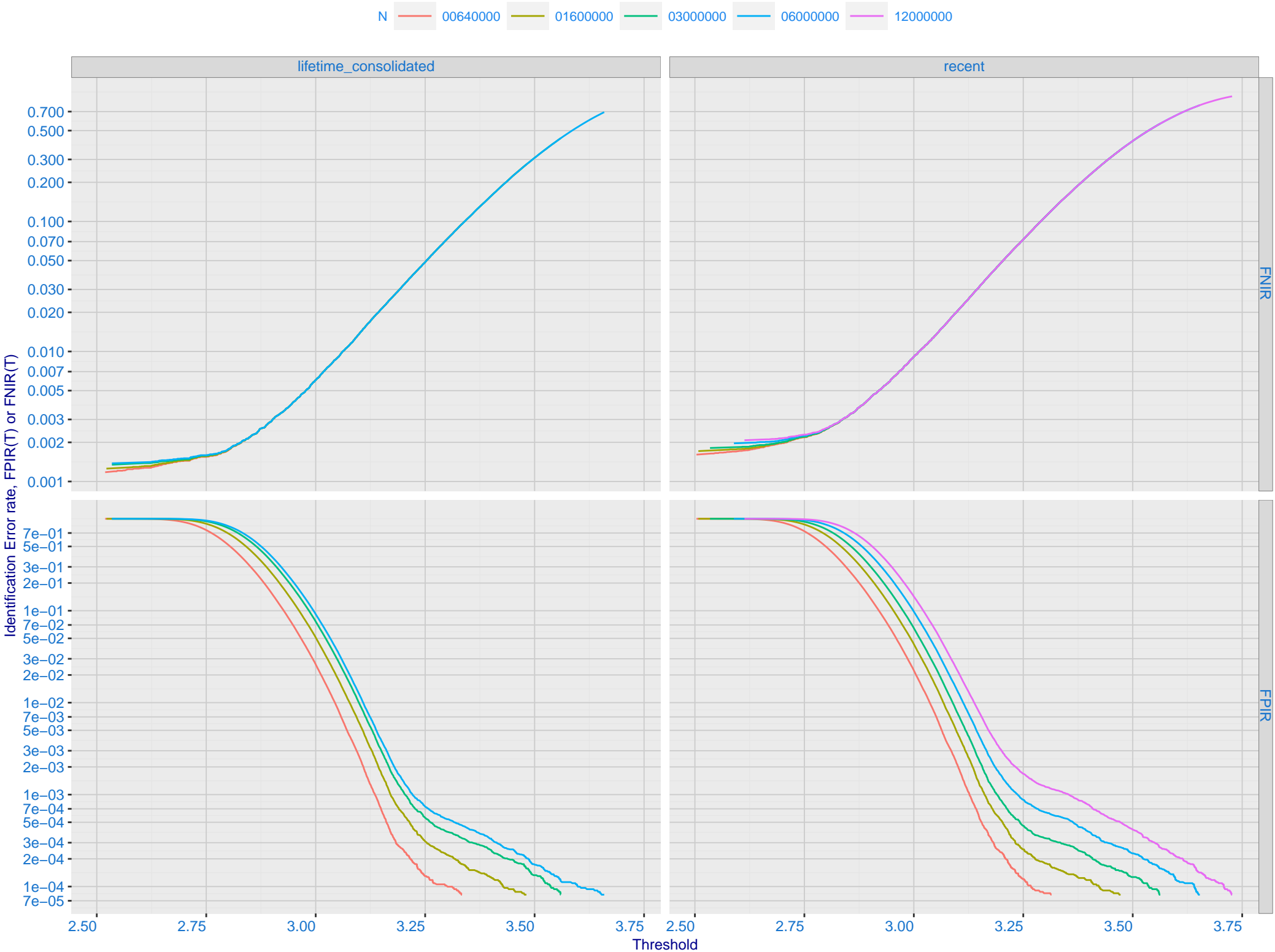
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

False negative identification rate, FNIR(N)

Enrolled population size, N

enrolment_style

consolidated
recent

Dataset:
2018 Mugshot
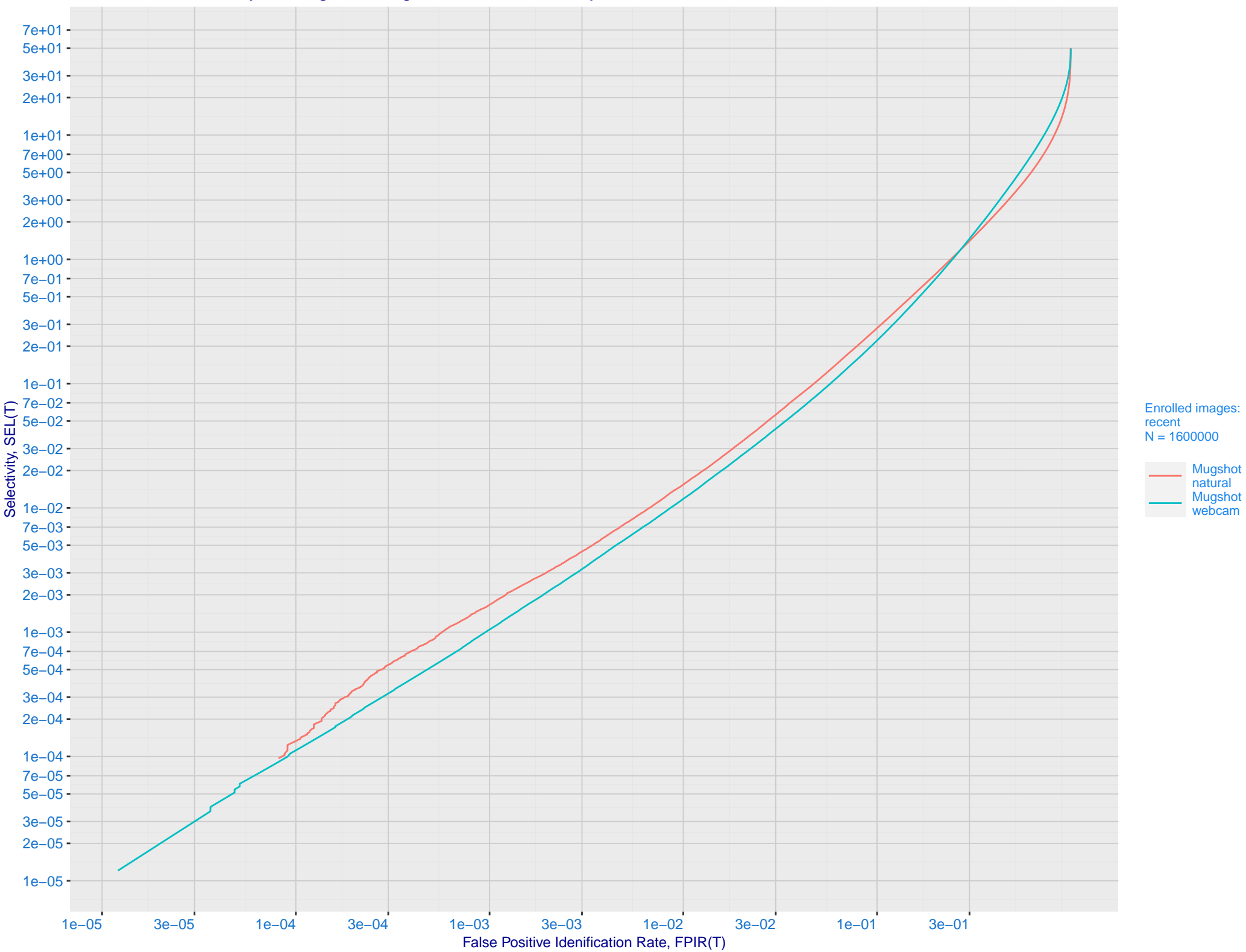FNIR @ FPIR = 0.001

everai_3
sensetime_004

D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
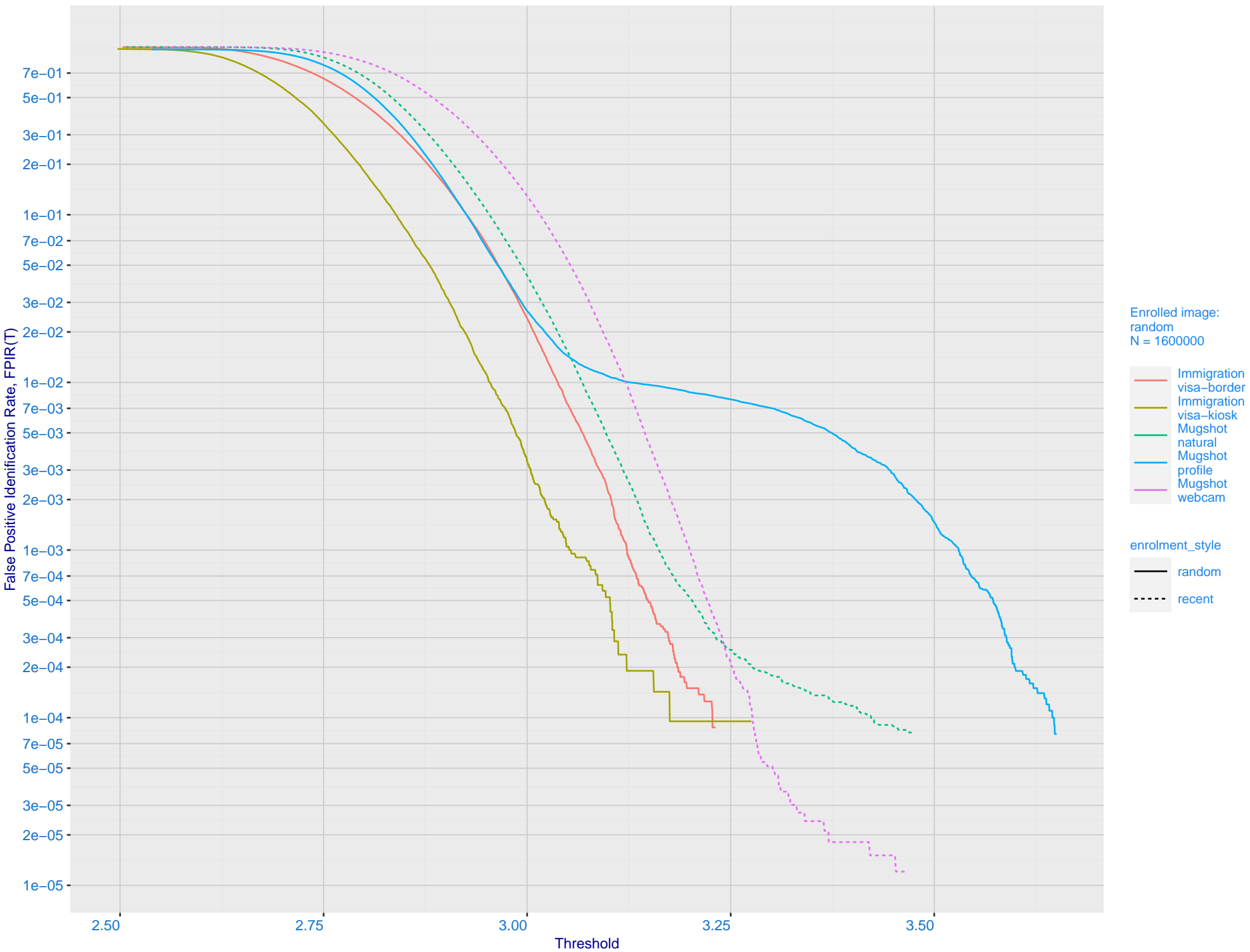
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
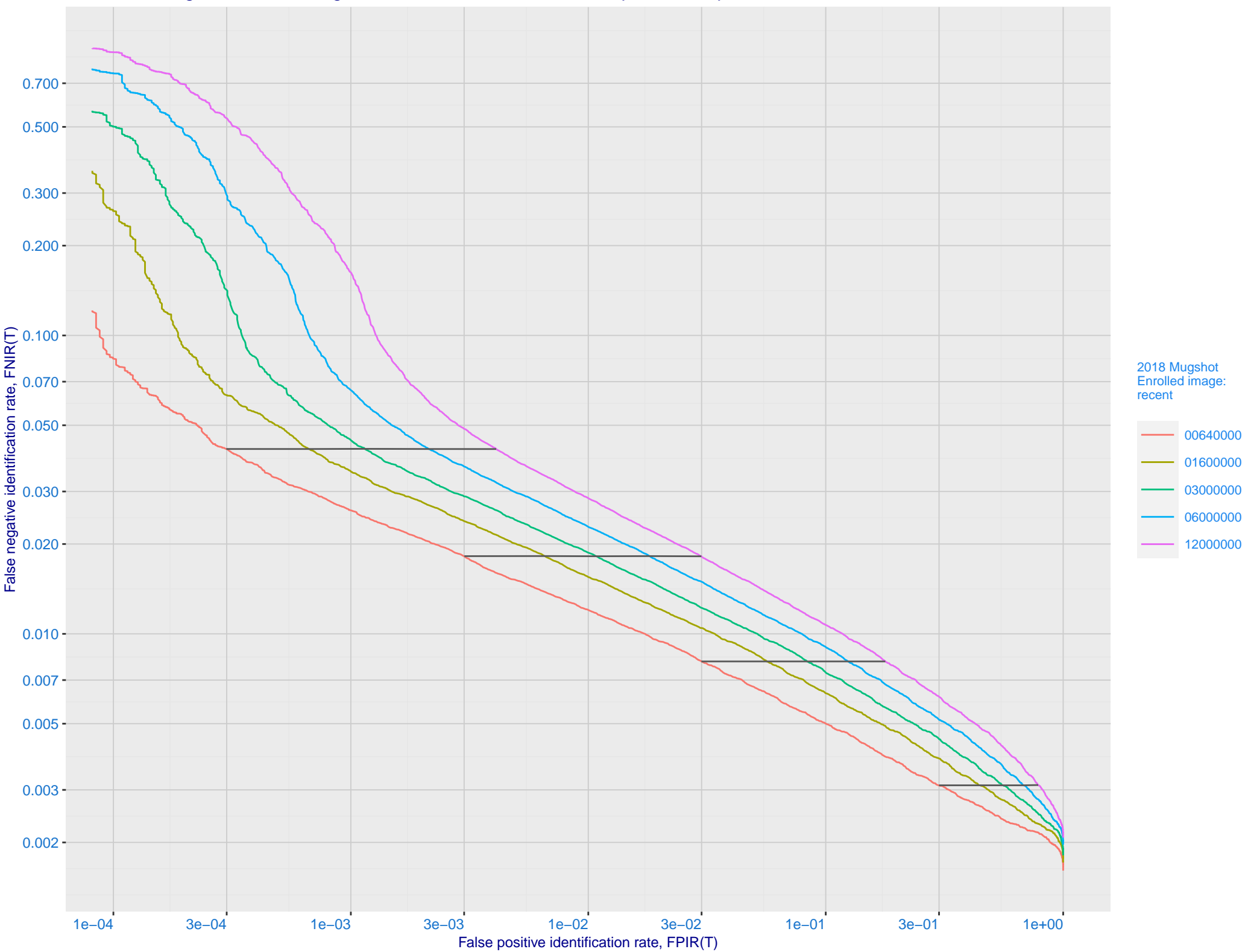
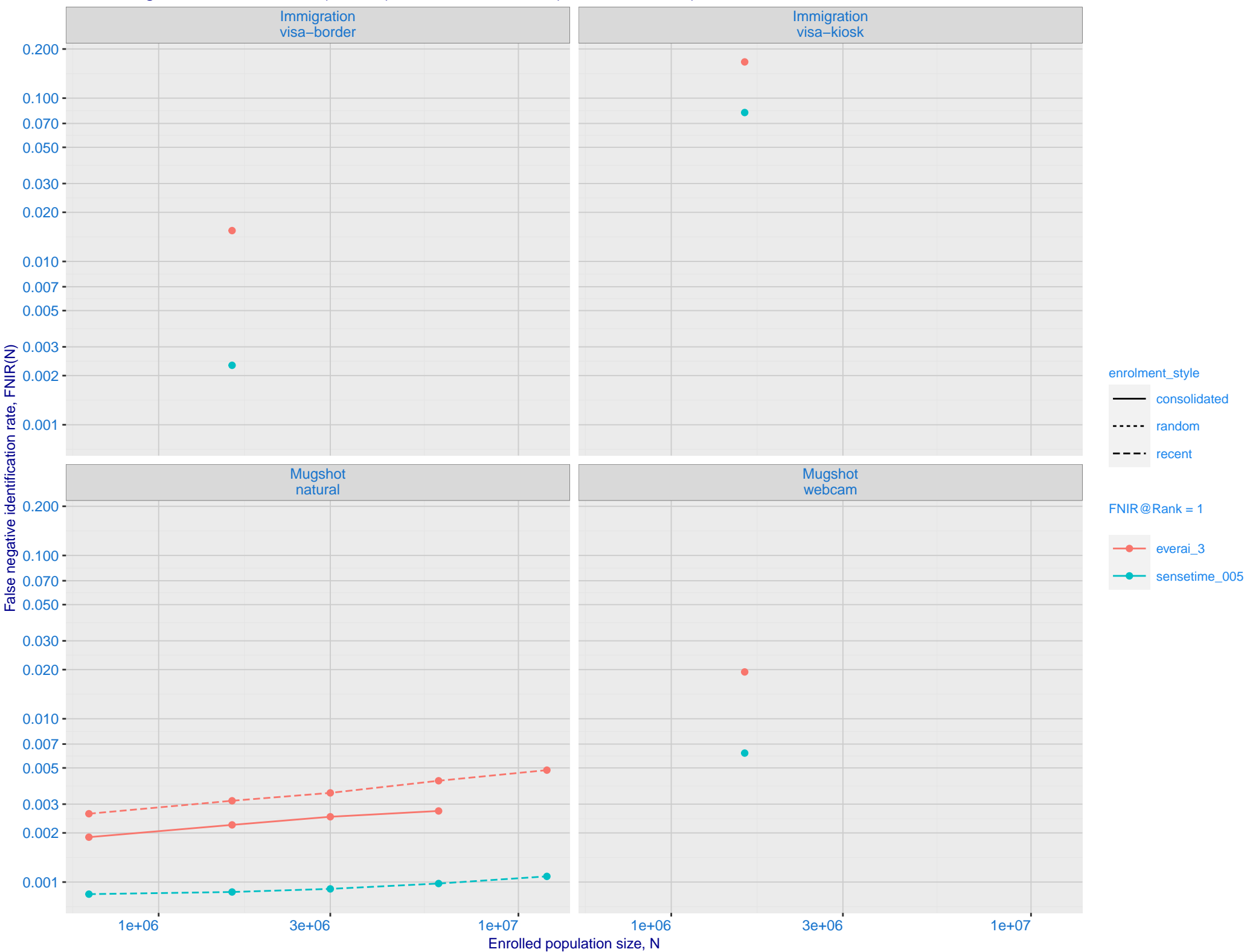F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

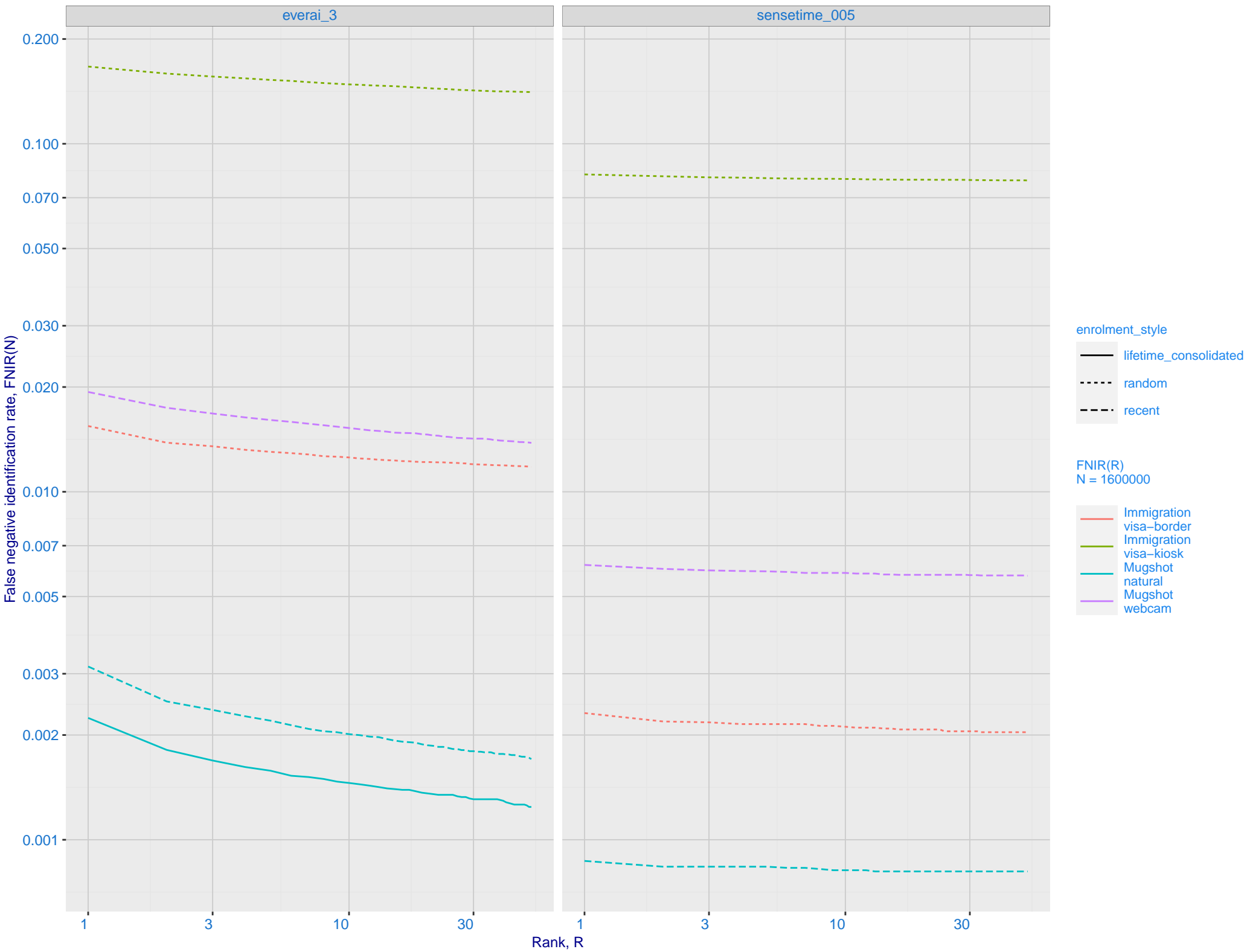G: FPIR dependence on T by probe type for N = 1600000 subjects

J: DET for Mugshot natural images and various N. Links connect points of equal threshold.
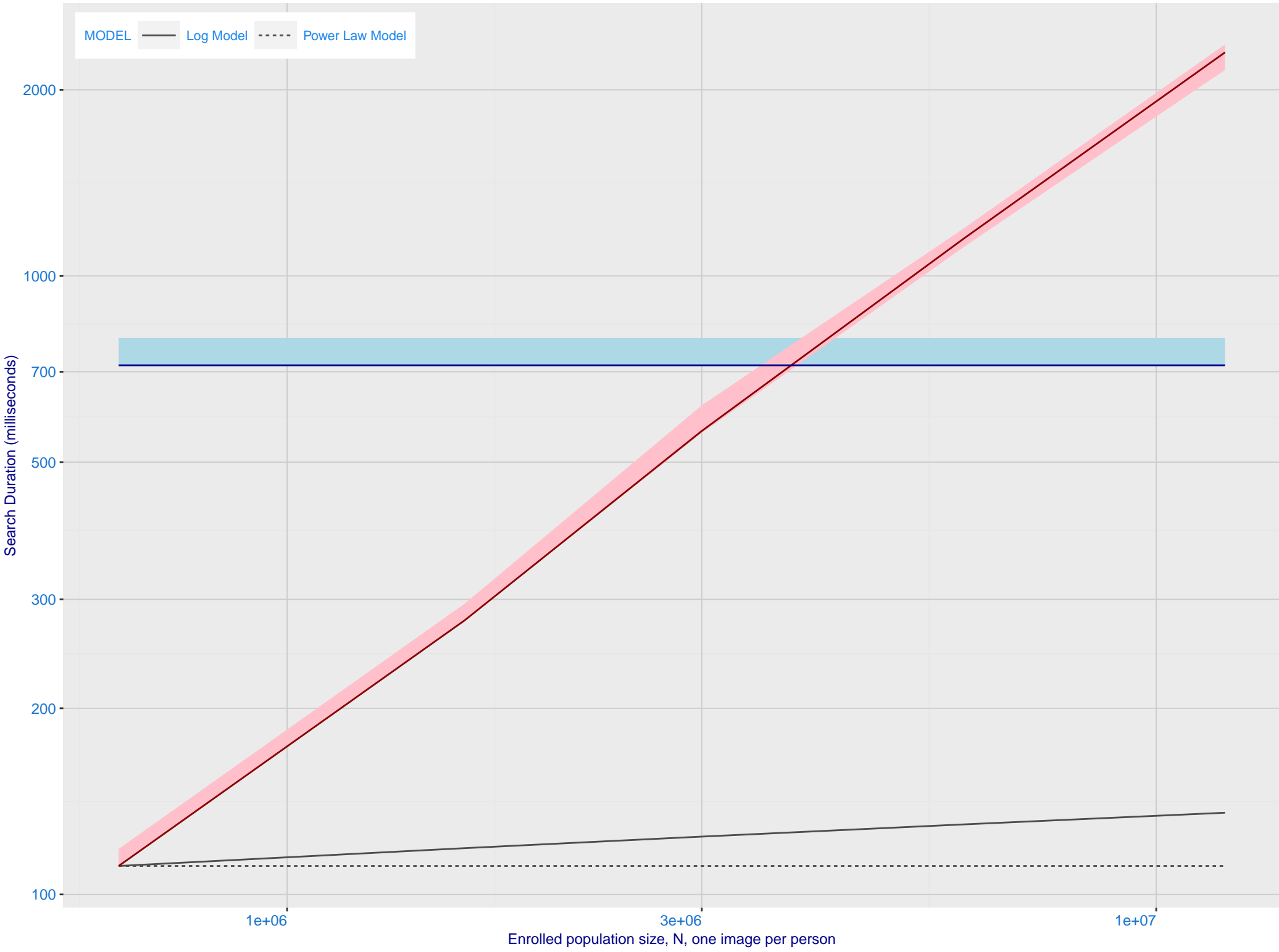
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

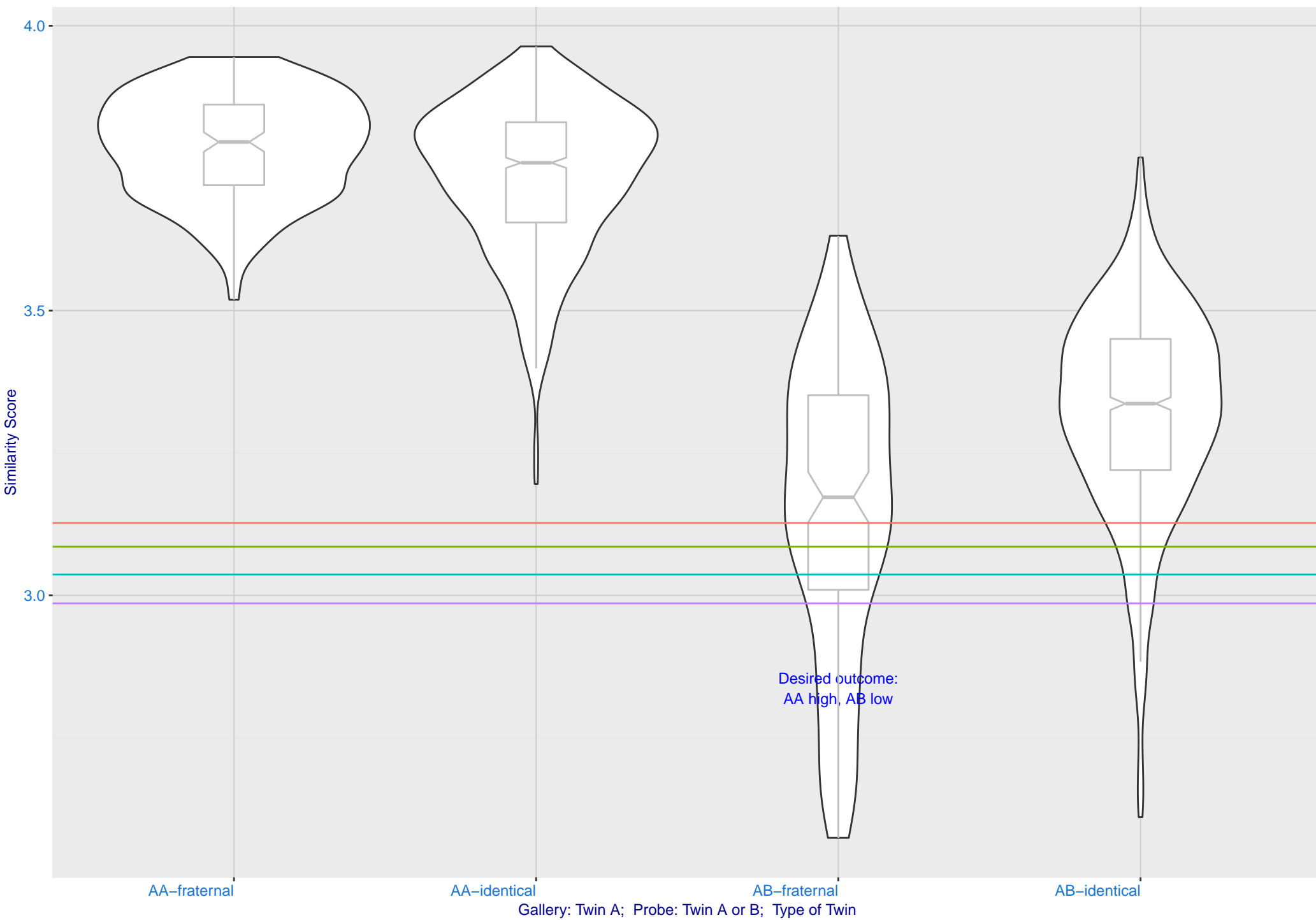L: Investigational mode: FNIR(1600000, R, 0) by probe type

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
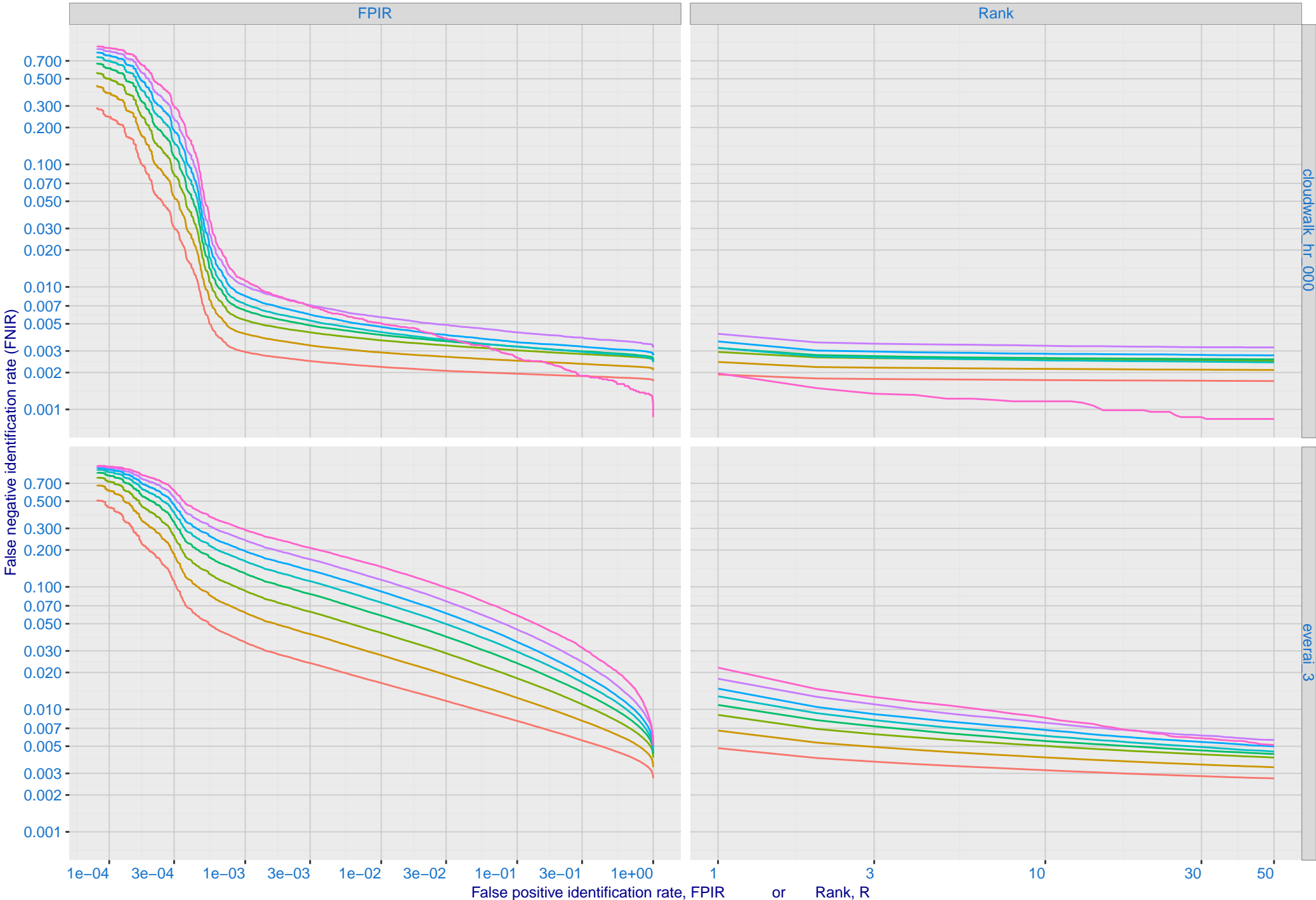
N: Solo−Twin and Twin−Twin similarity scores

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

Similarity Score

Desired outcome:
AA high, AB low

AA−fraternal   AA−identical   AB−fraternal   AB−identical

Gallery: Twin A; Probe: Twin A or B; Type of Twin

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