A: Datasheet

Algorithm: siat_1

Developer: Shenzhen Inst Adv Integrated Tech CAS

Submission Date: 2018_06_30

Template size: 2052 bytes

Template time (2.5 percentile): 777 msec

Template time (median): 829 msec

Template time (97.5 percentile): 927 msec

Investigation:

Frontal mugshot ranking 19 (out of 259) –– FNIR(1600000, 0, 1) = 0.0018 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 199 (out of 221) –– FNIR(1600000, 0, 1) = 0.3328 vs. lowest 0.0062 from sensetime_005

Immigration visa–border ranking 25 (out of 142) –– FNIR(1600000, 0, 1) = 0.0043 vs. lowest 0.0014 from visionlabs_009

Immigration visa–kiosk ranking 21 (out of 139) –– FNIR(1600000, 0, 1) = 0.0991 vs. lowest 0.0694 from cib_000
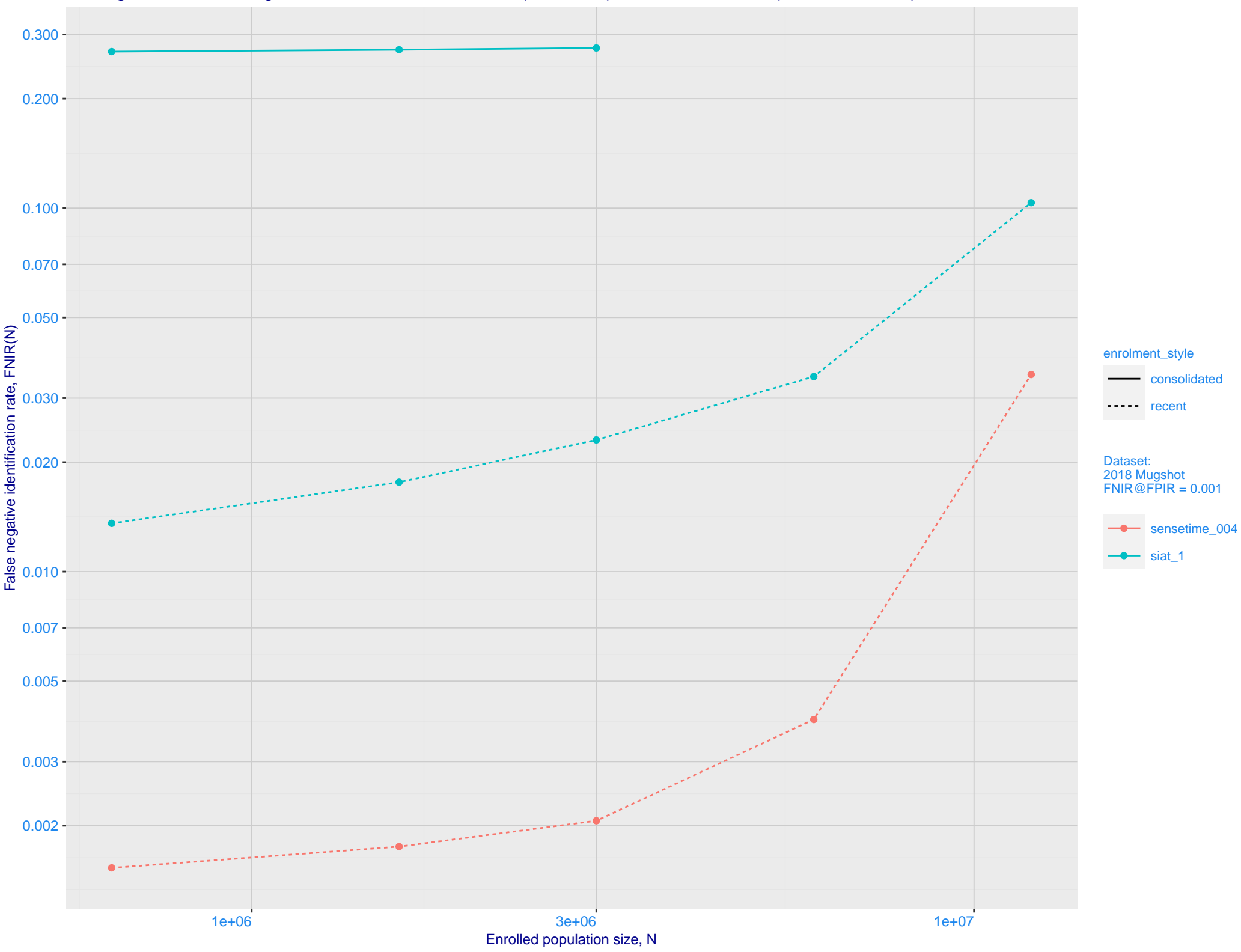
Identification:

Frontal mugshot ranking 25 (out of 259) –– FNIR(1600000, T, L+1) = 0.0176, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
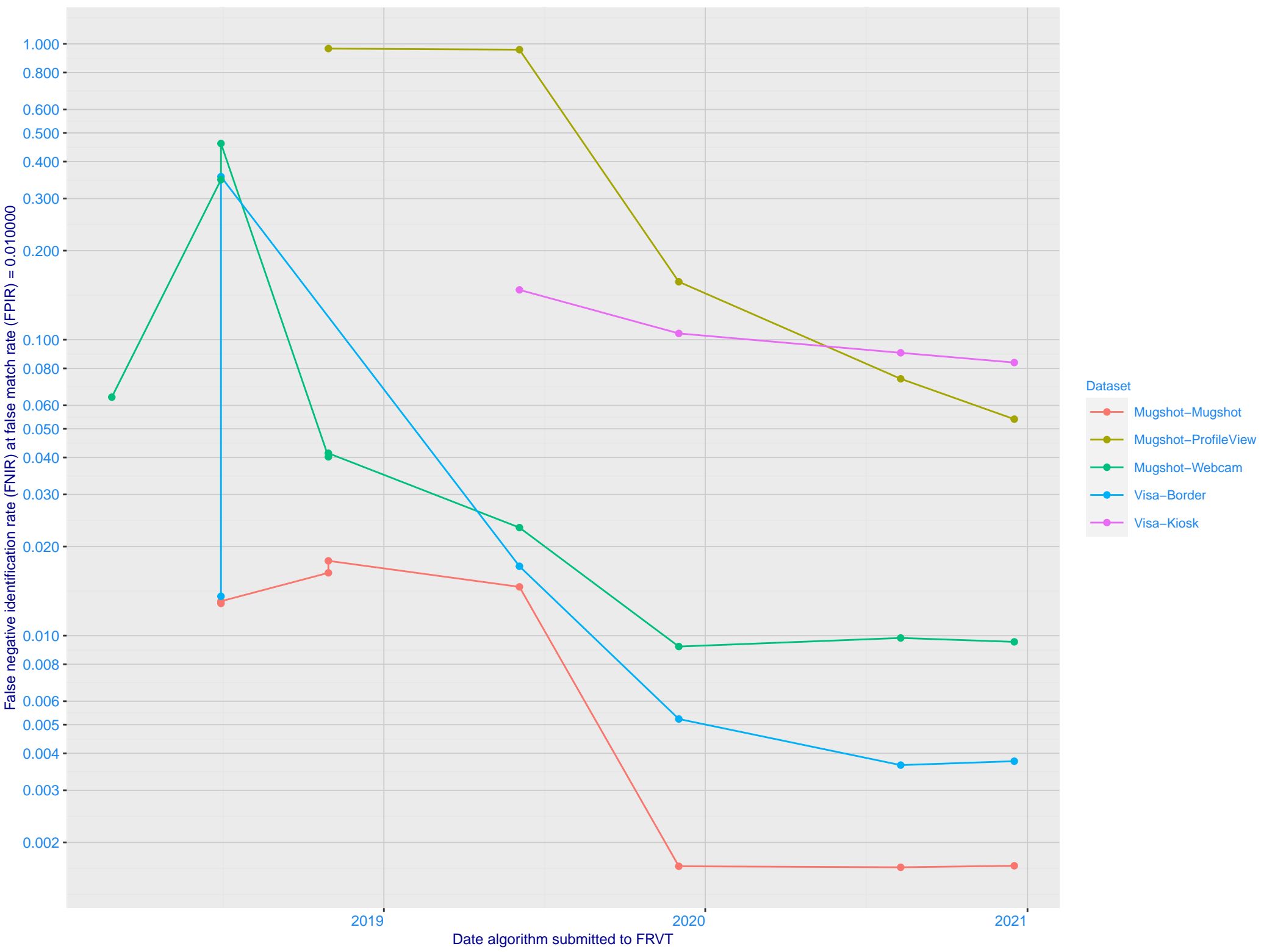
Mugshot webcam ranking 163 (out of 219) –– FNIR(1600000, T, L+1) = 0.3647, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Immigration visa–border ranking 23 (out of 139) –– FNIR(1600000, T, L+1) = 0.0308, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004
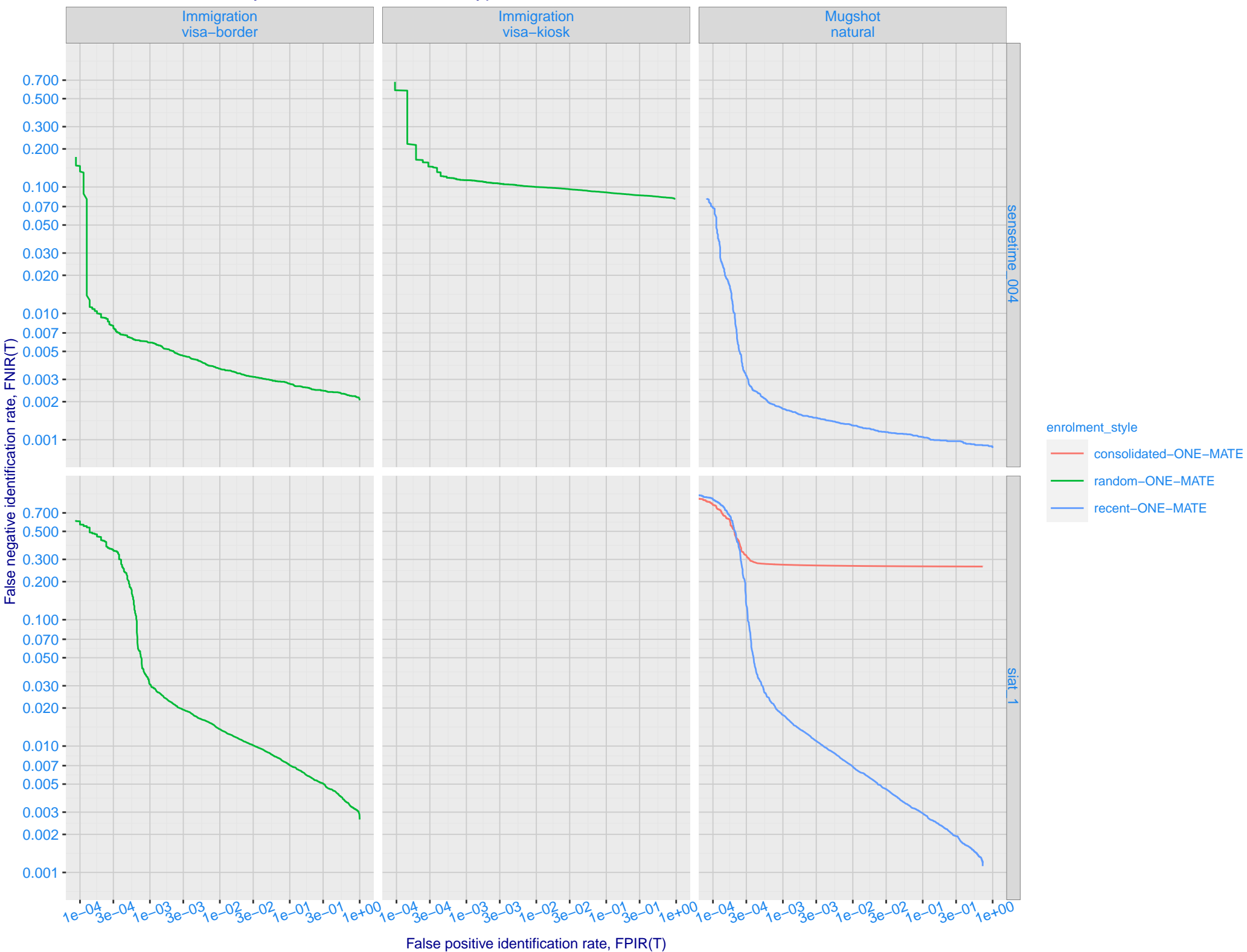
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
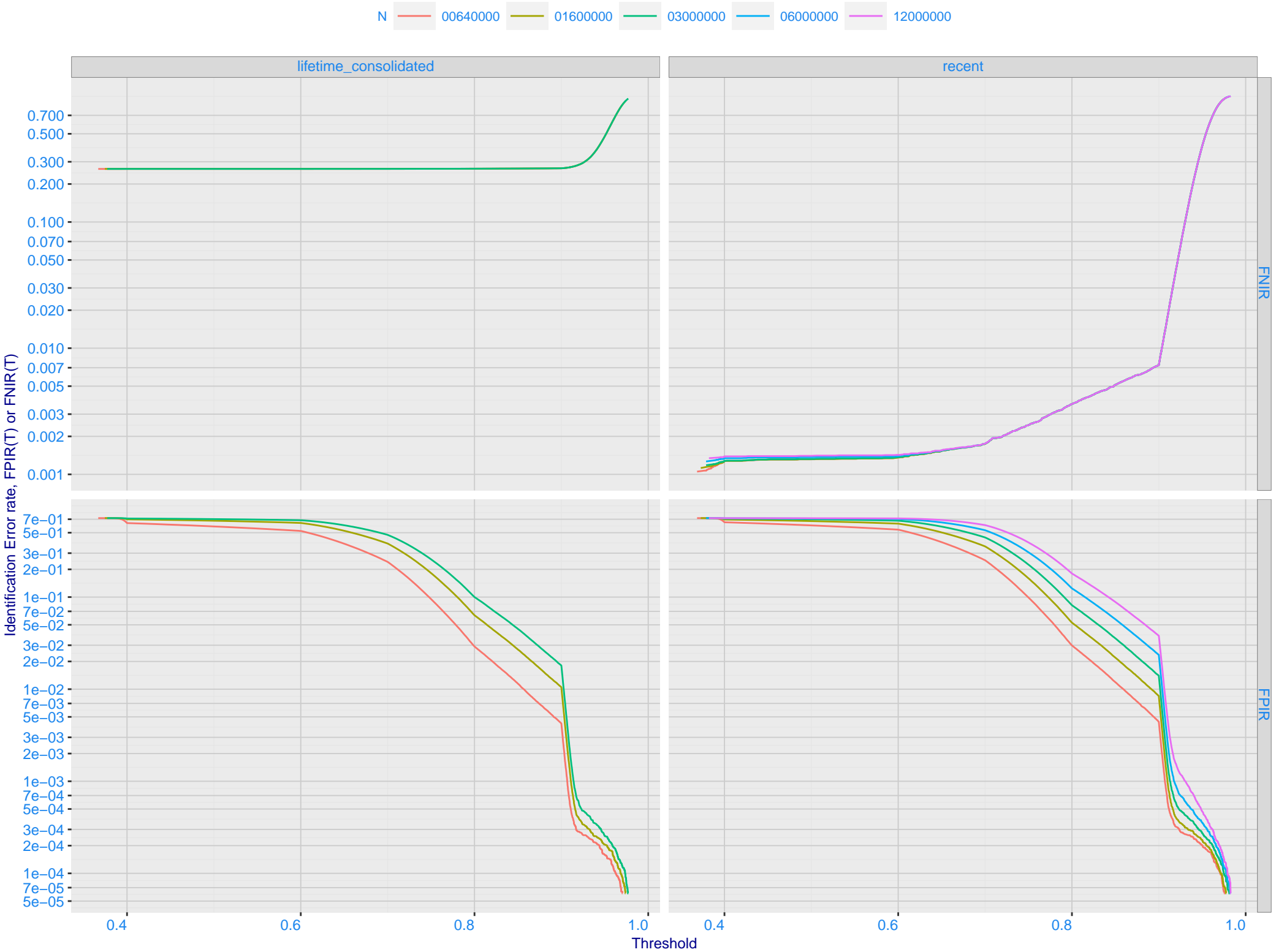
C: Evolution of accuracy for SENSETIME algorithms on three datasets 2018 – present
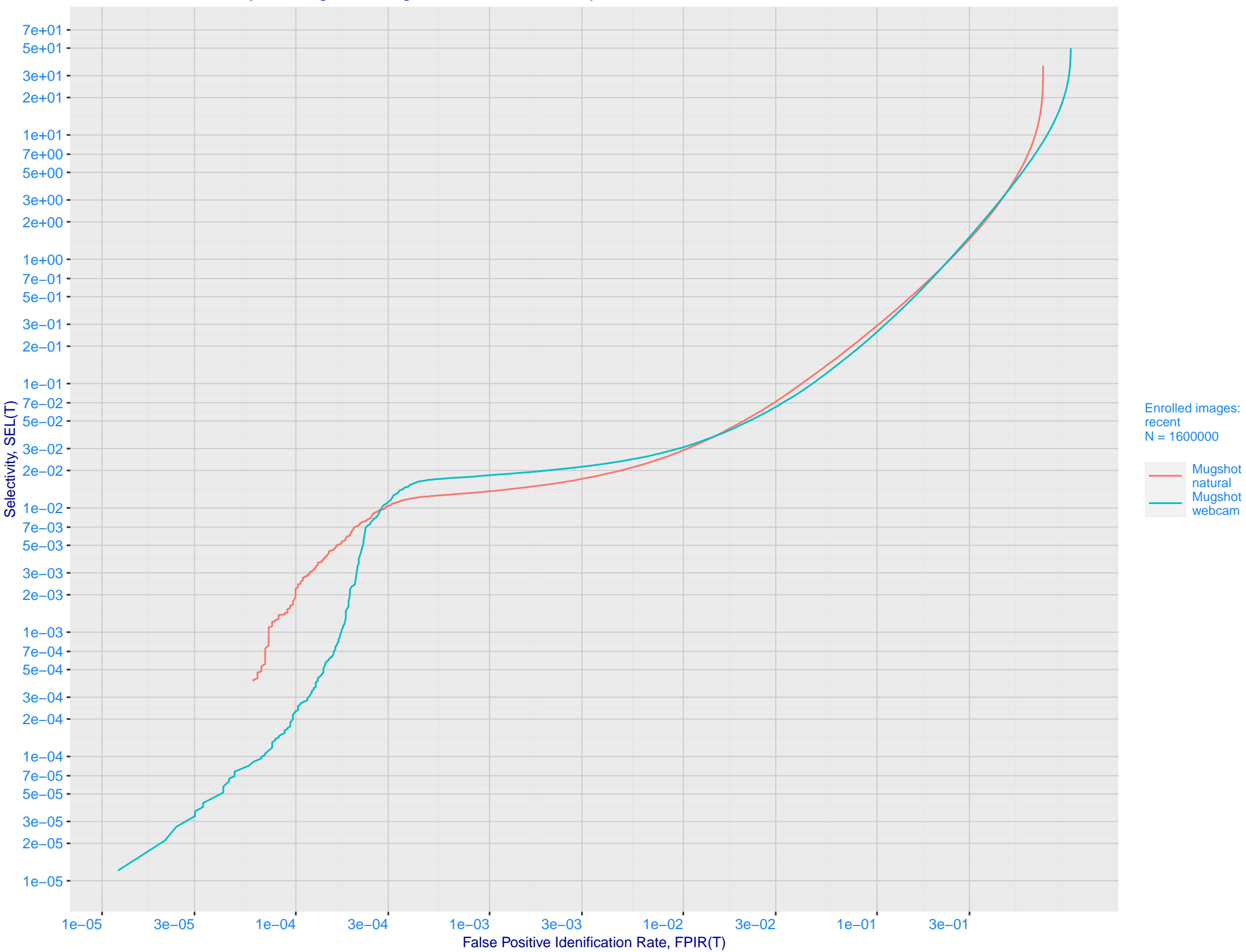
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
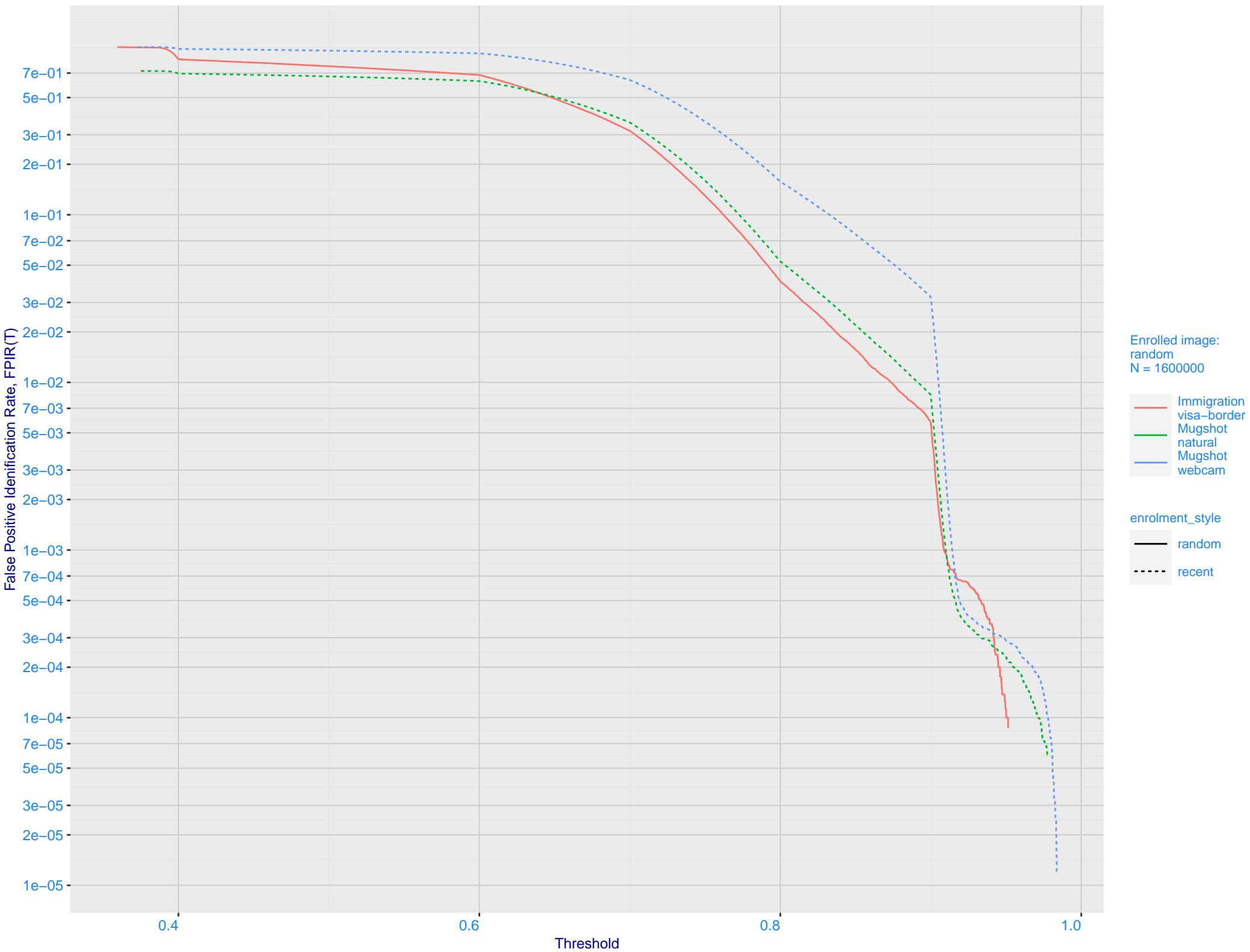
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
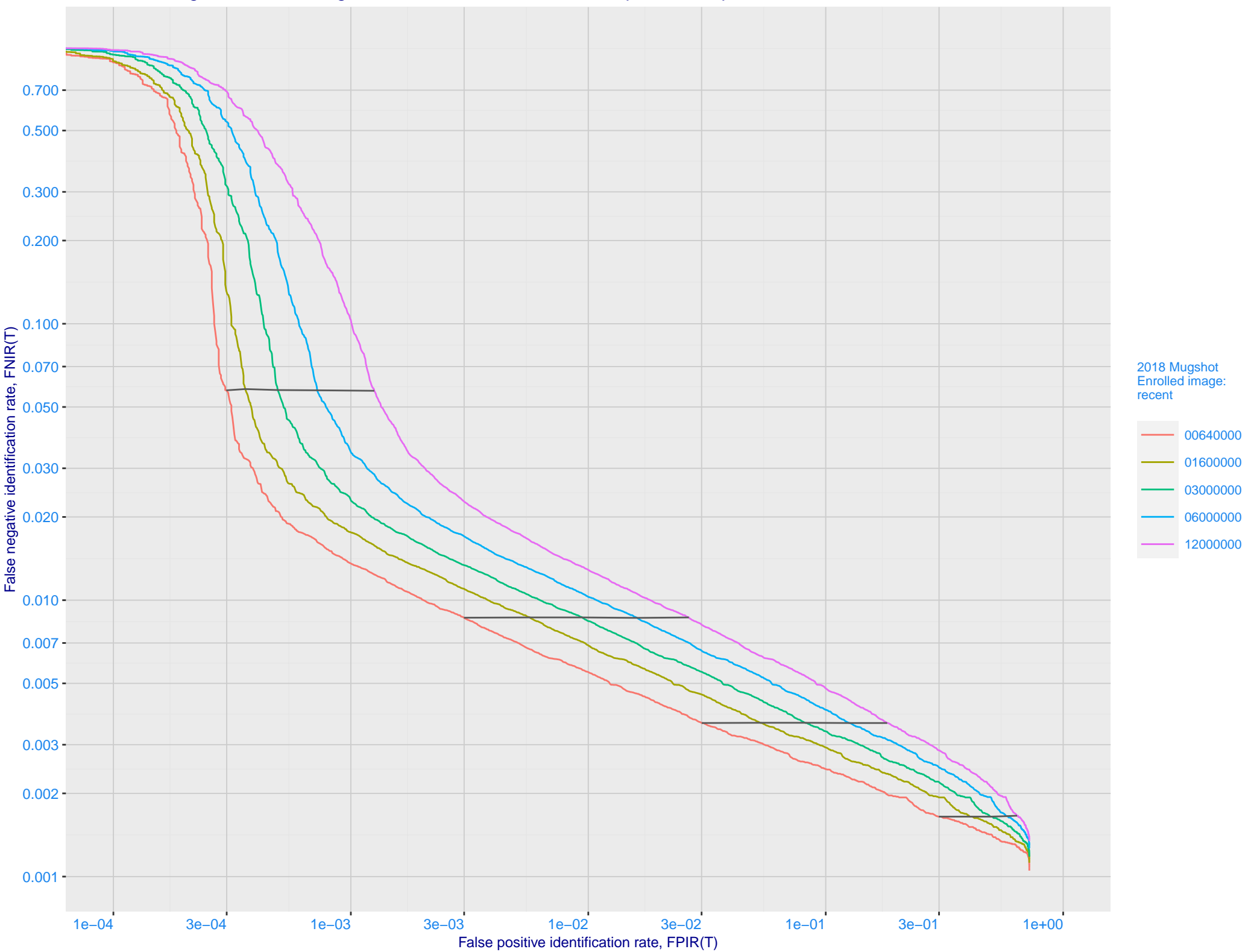
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
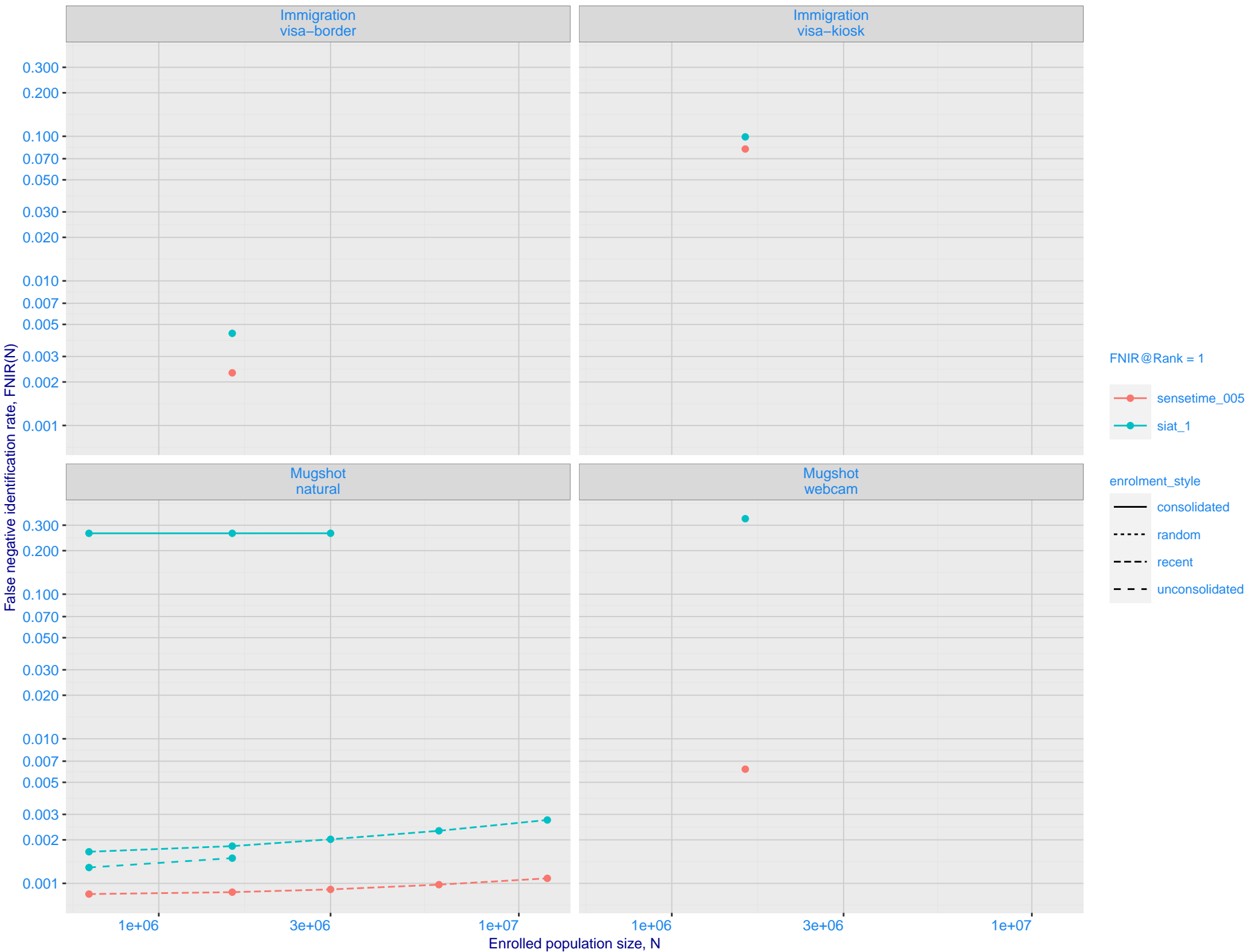
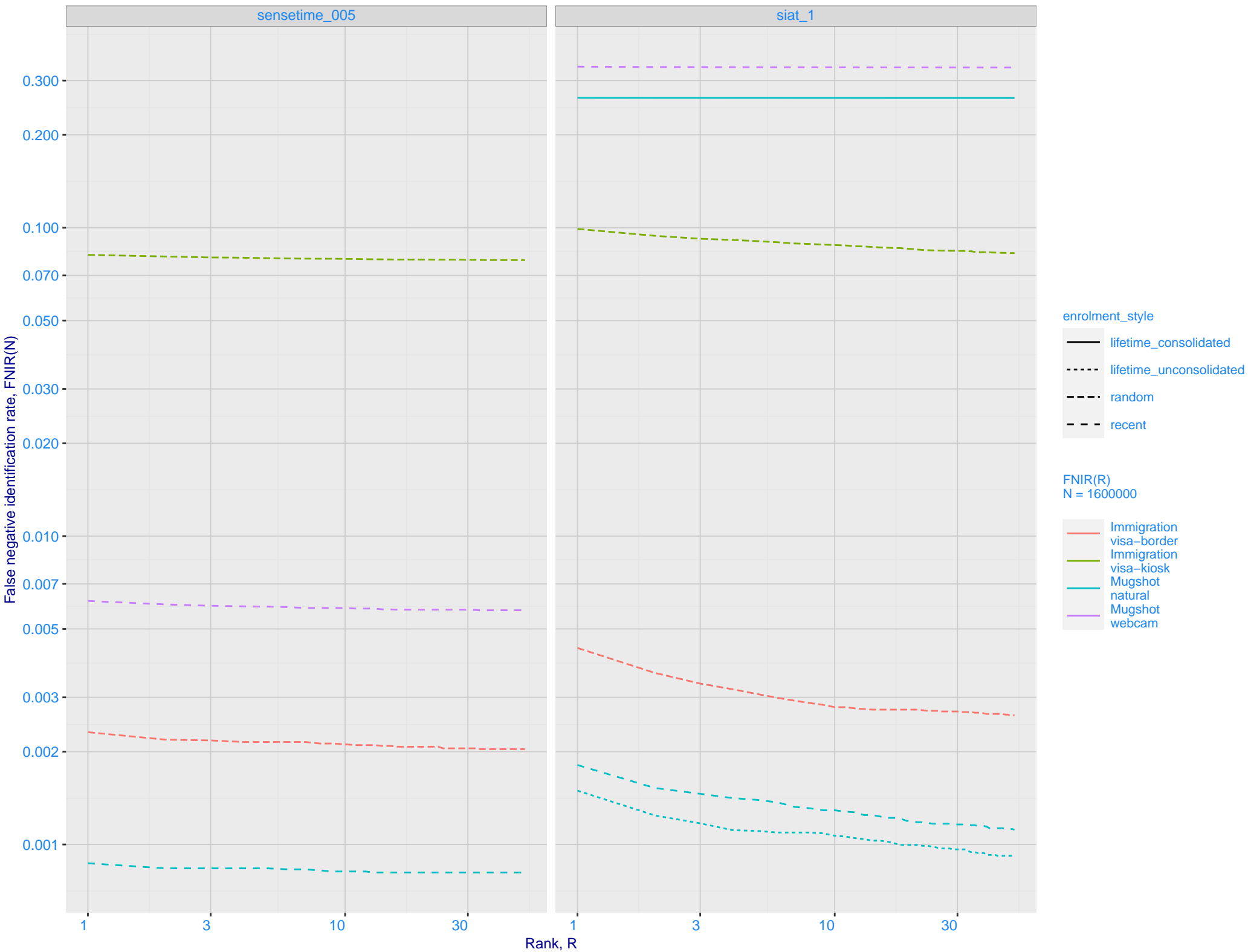G: FPIR dependence on T by probe type for N = 1600000 subjects

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

False negative identification rate, FNIR(T) (y-axis)

False positive identification rate, FPIR(T) (x-axis)

2018 Mugshot
Enrolled image:
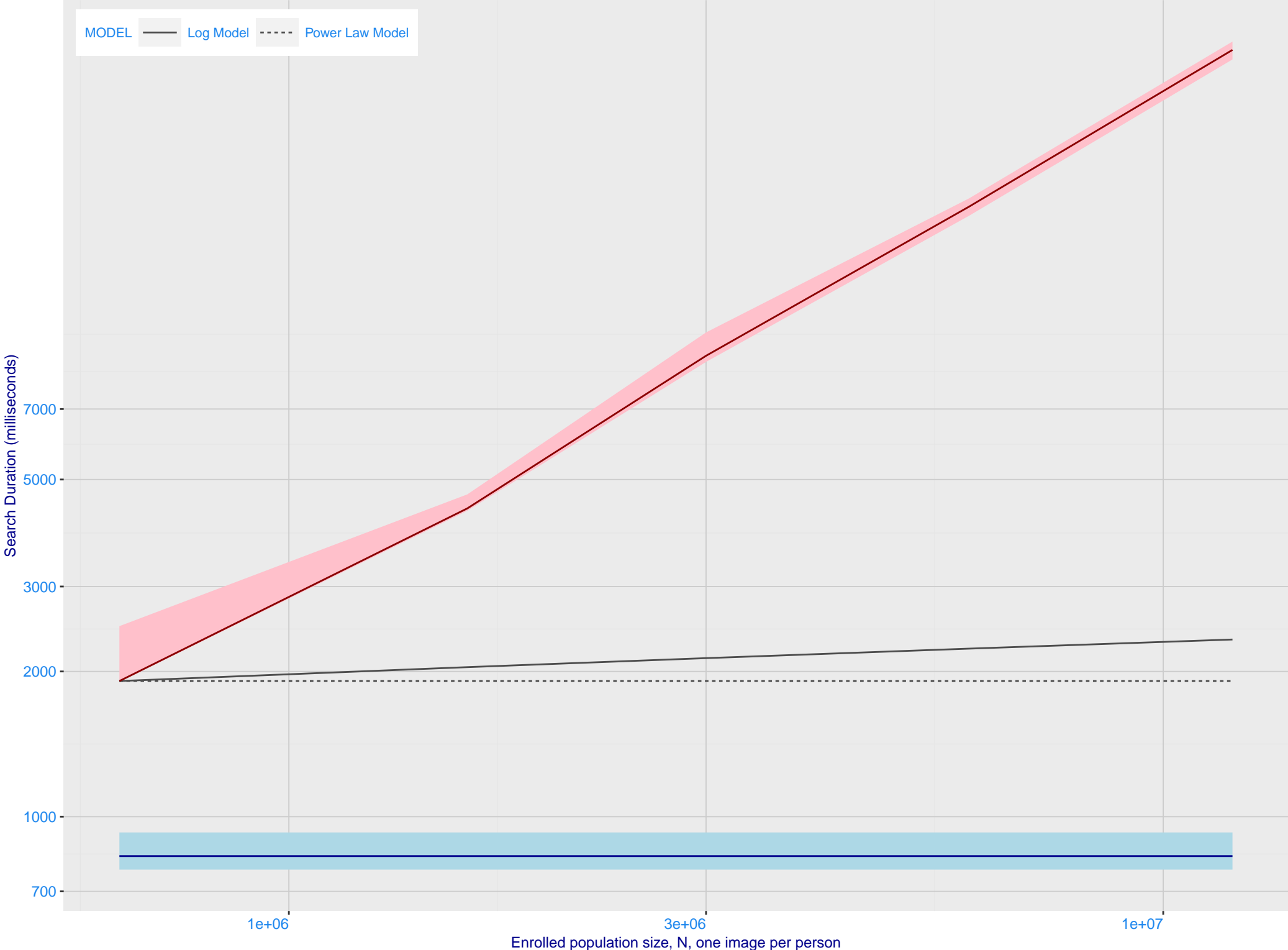recent

00640000
01600000
03000000
06000000
12000000

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

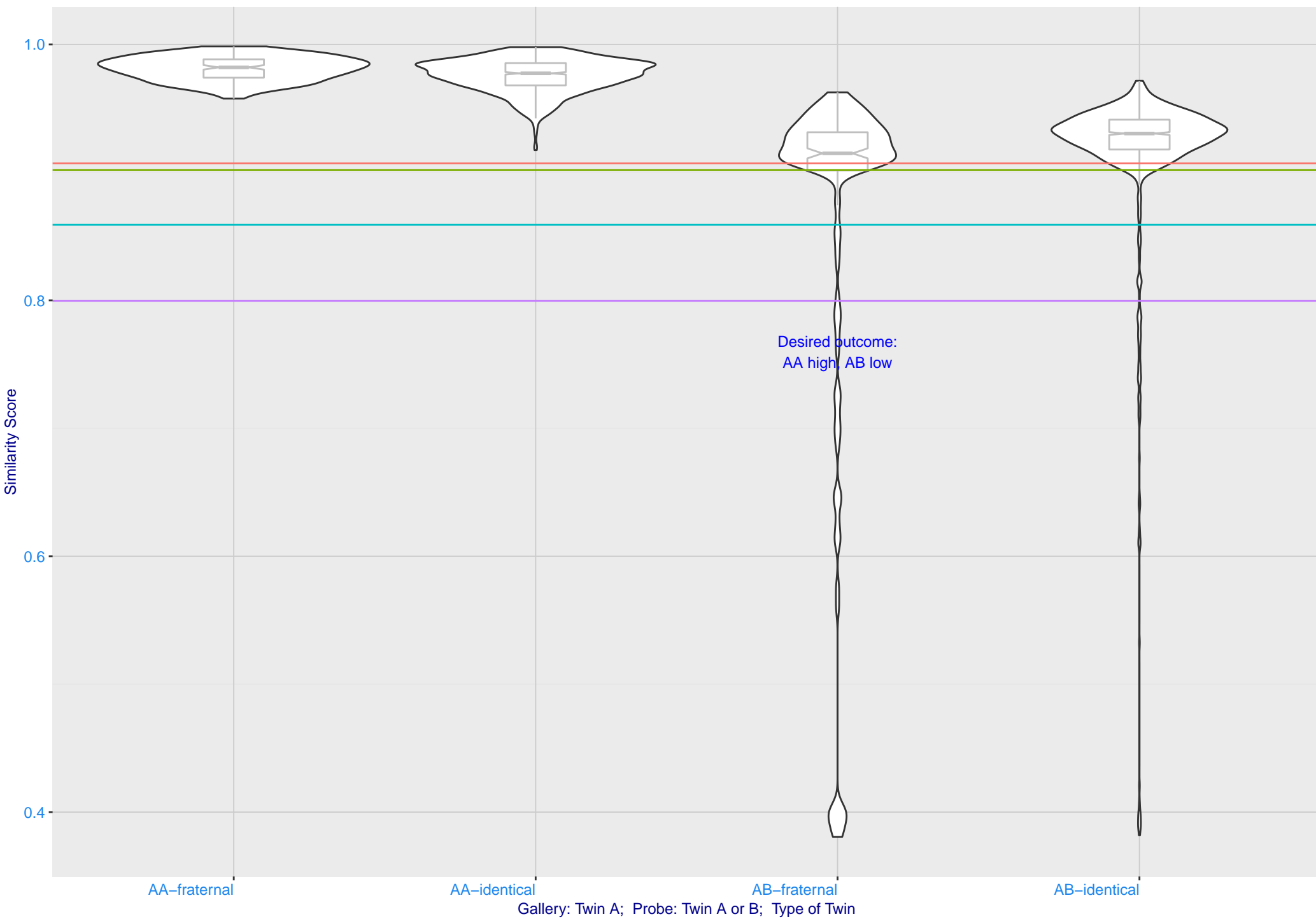J: Investigational mode: FNIR(1600000, R, 0) by probe type

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

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

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