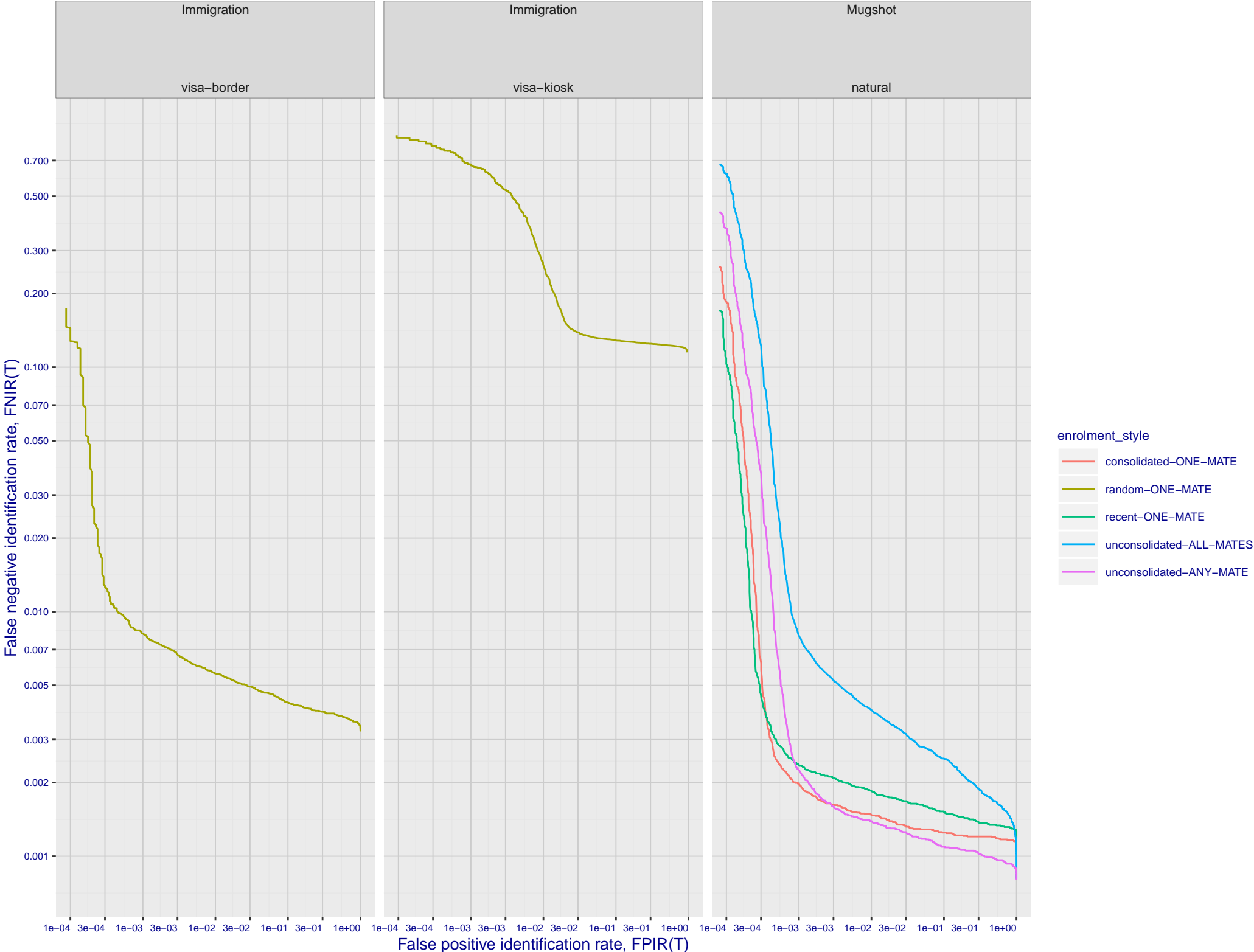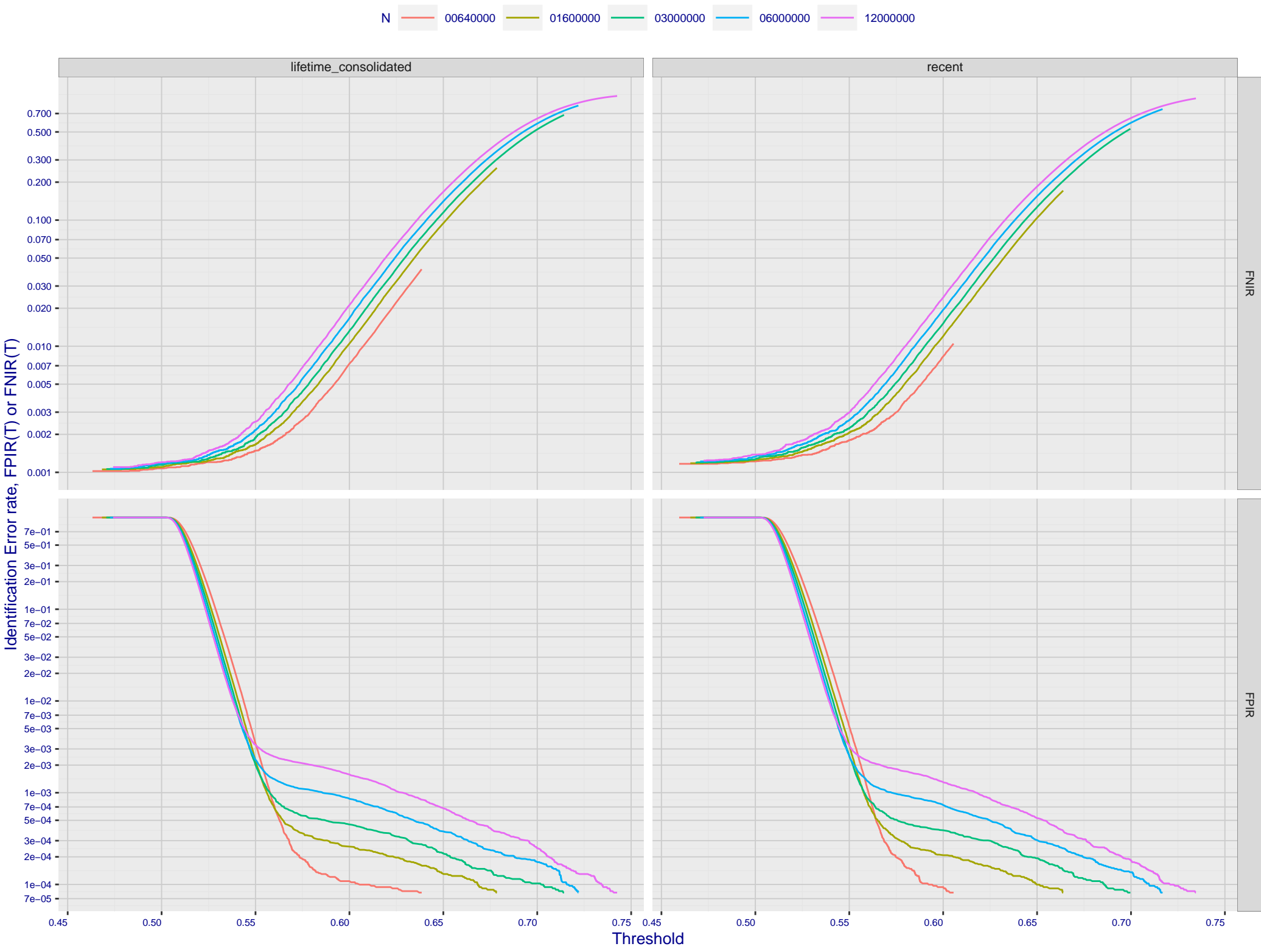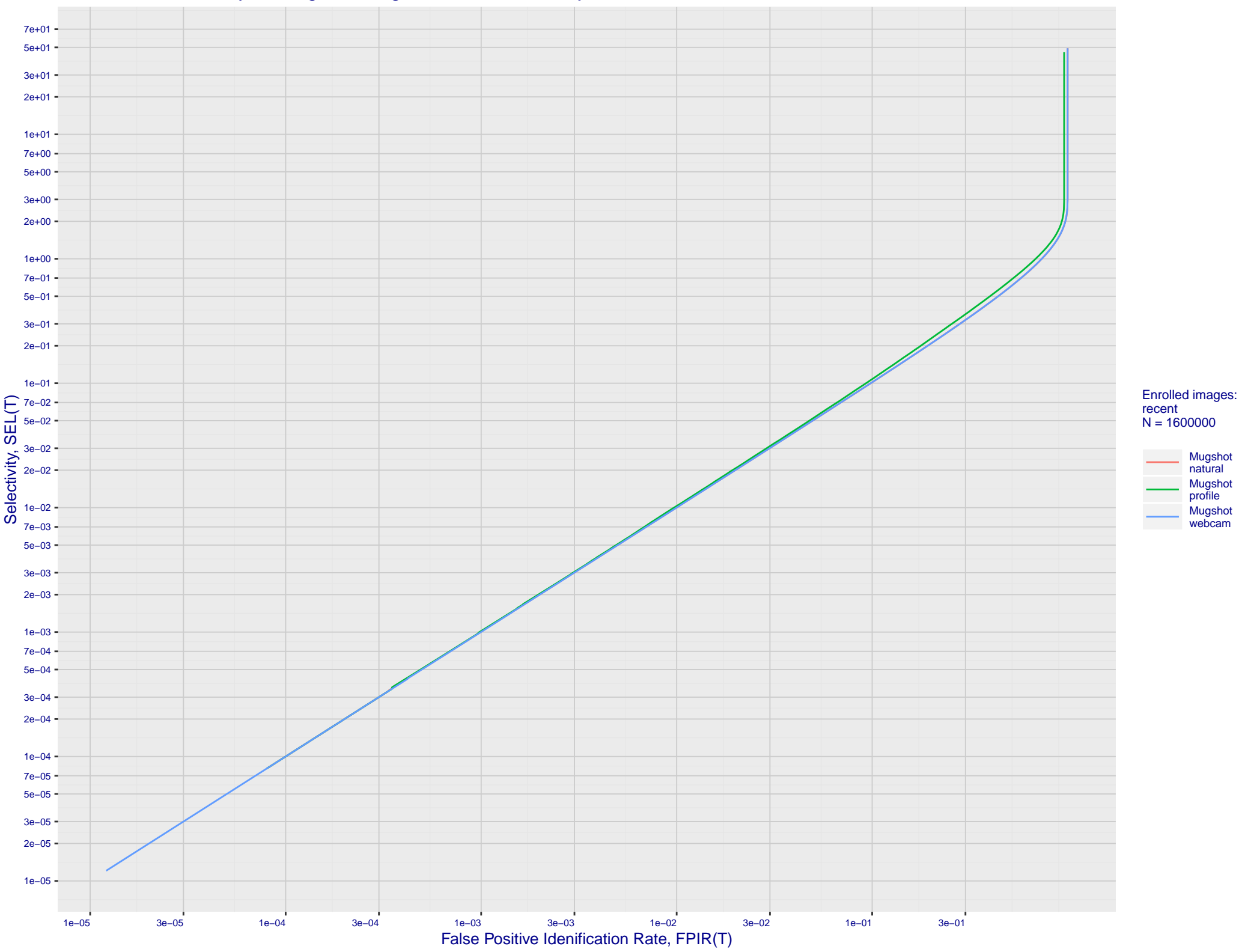A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
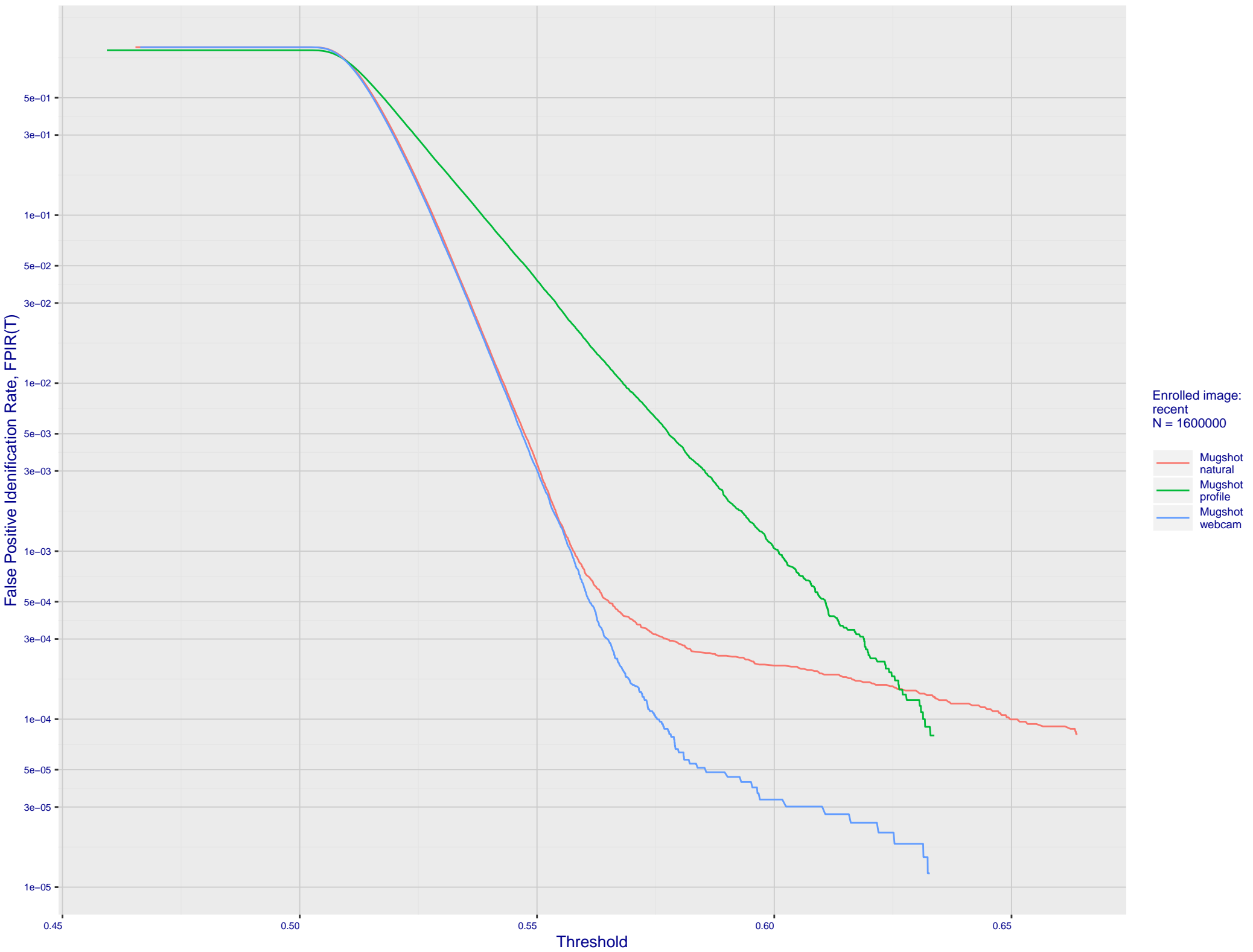
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
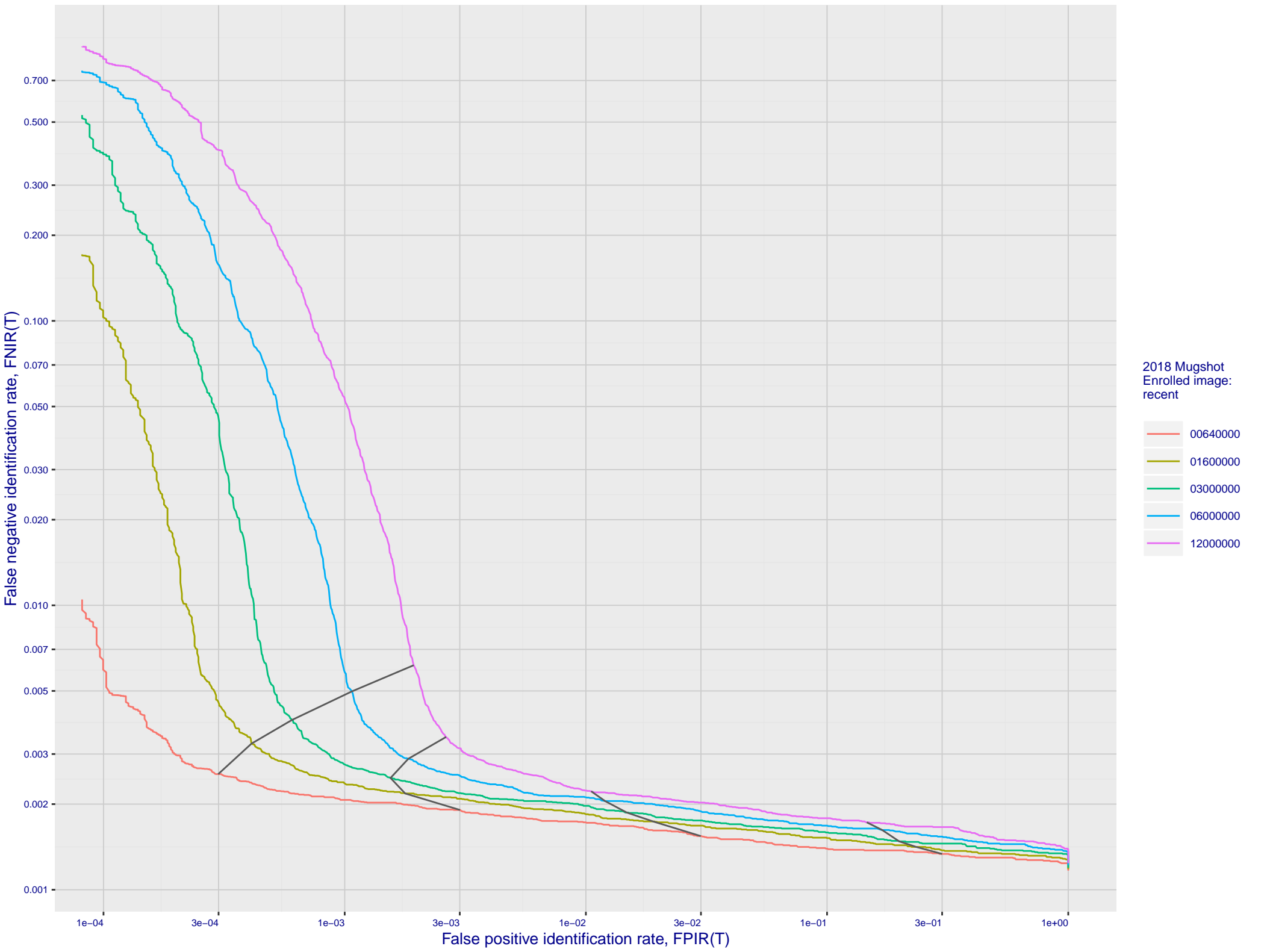
C: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

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

False Positive Idenification Rate, FPIR(T)

Threshold

Enrolled image:
recent
N = 1600000

Mugshot
natural

Mugshot
profile

Mugshot
webcam

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

2018 Mugshot
Enrolled image:
recent

- 00640000
- 01600000
- 03000000
- 06000000
- 12000000

False negative identification rate, FNIR(T)

False positive identification rate, FPIR(T)

F: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
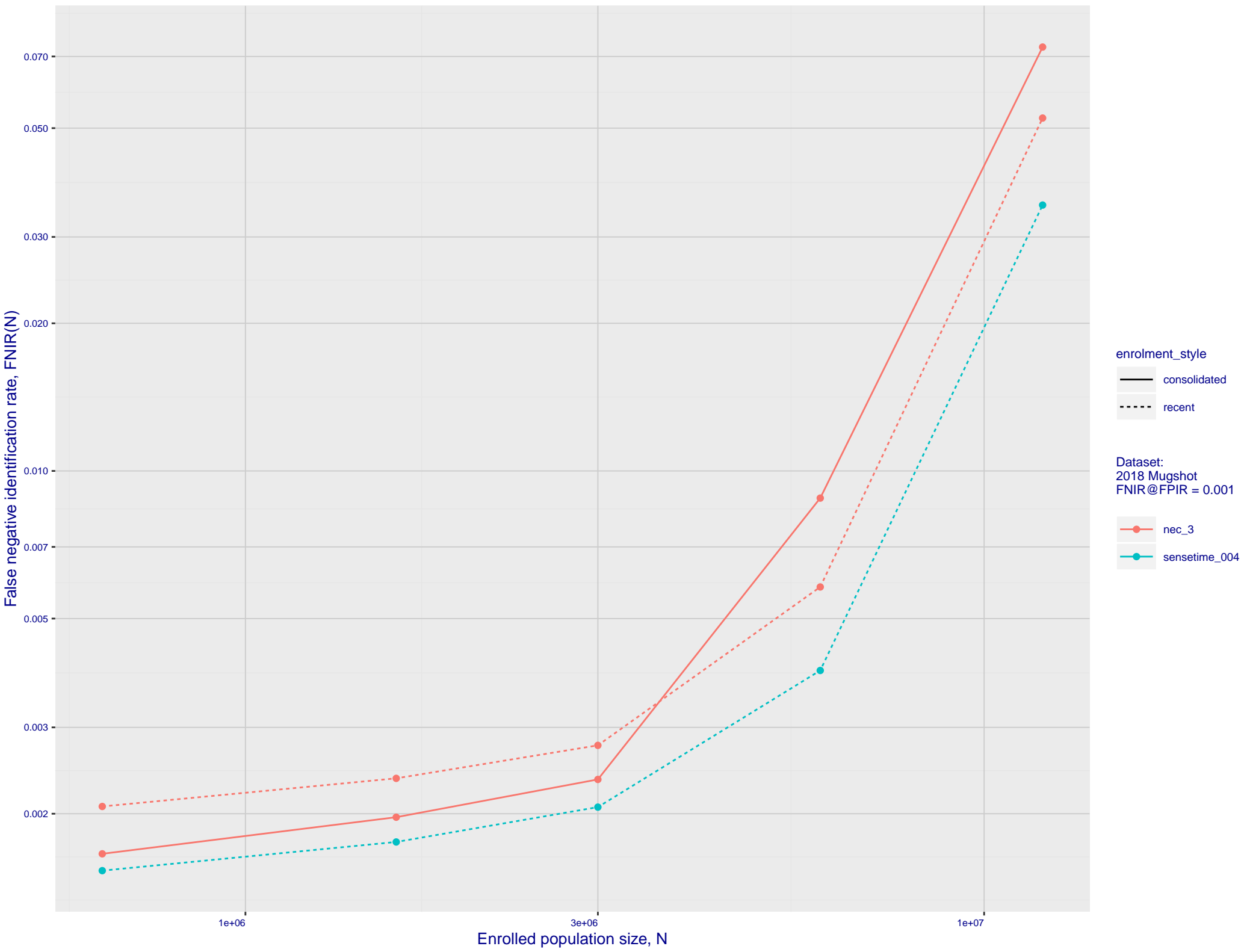
G: Datasheet

Algorithm: nec_3

Developer: NEC

Submission Date: 2018_10_30

Template size: 1712 bytes

Template time (2.5 percentile): 660 msec

Template time (median): 665 msec

Template time (97.5 percentile): 1015 msec

Frontal mugshot investigation rank 7 –– FNIR(1600000, 0, 1) = 0.0014 vs. lowest 0.0010 from sensetime_004

natural investigation rank 12 –– FNIR(1600000, 0, 1) = 0.0099 vs. lowest 0.0067 from sensetime_003

natural investigation rank 45 –– FNIR(1600000, 0, 1) = 0.2438 vs. lowest 0.0492 from paravision_005

natural investigation rank 45 –– FNIR(1600000, 0, 1) = 0.2438 vs. lowest 0.0492 from paravision_005

natural investigation rank 16 –– FNIR(1600000, 0, 1) = 0.0037 vs. lowest 0.0014 from visionlabs_009

natural investigation rank 35 –– FNIR(1600000, 0, 1) = 0.1204 vs. lowest 0.0694 from cib_000

Frontal mugshot identification rank 3 –– FNIR(1600000, T, L+1) = 0.0024 vs. lowest 0.0018 from sensetime_004

natural identification rank 4 –– FNIR(1600000, T, L+1) = 0.0171 vs. lowest 0.0122 from sensetime_003

natural identification rank 17 –– FNIR(1600000, T, L+1) = 0.6068 vs. lowest 0.1020 from sensetime_004

natural identification rank 5 –– FNIR(1600000, T, L+1) = 0.0081 vs. lowest 0.0059 from sensetime_004

natural identification rank 60 –– FNIR(1600000, T, L+1) = 0.6749 vs. lowest 0.1129 from visionlabs_009
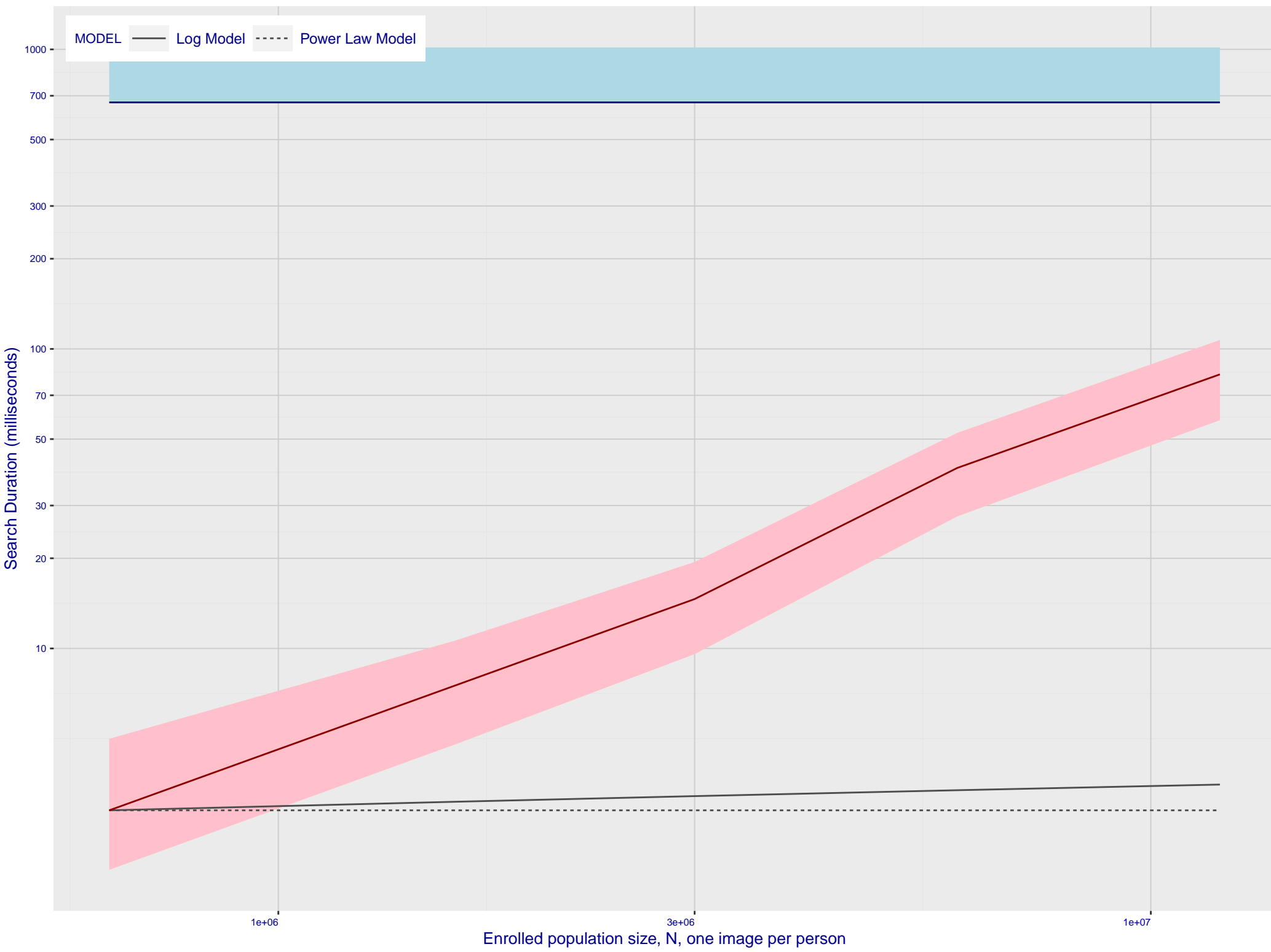
H: Investigational mode: FNIR(N, 1, 0) vs. most accurate (yitu_4)
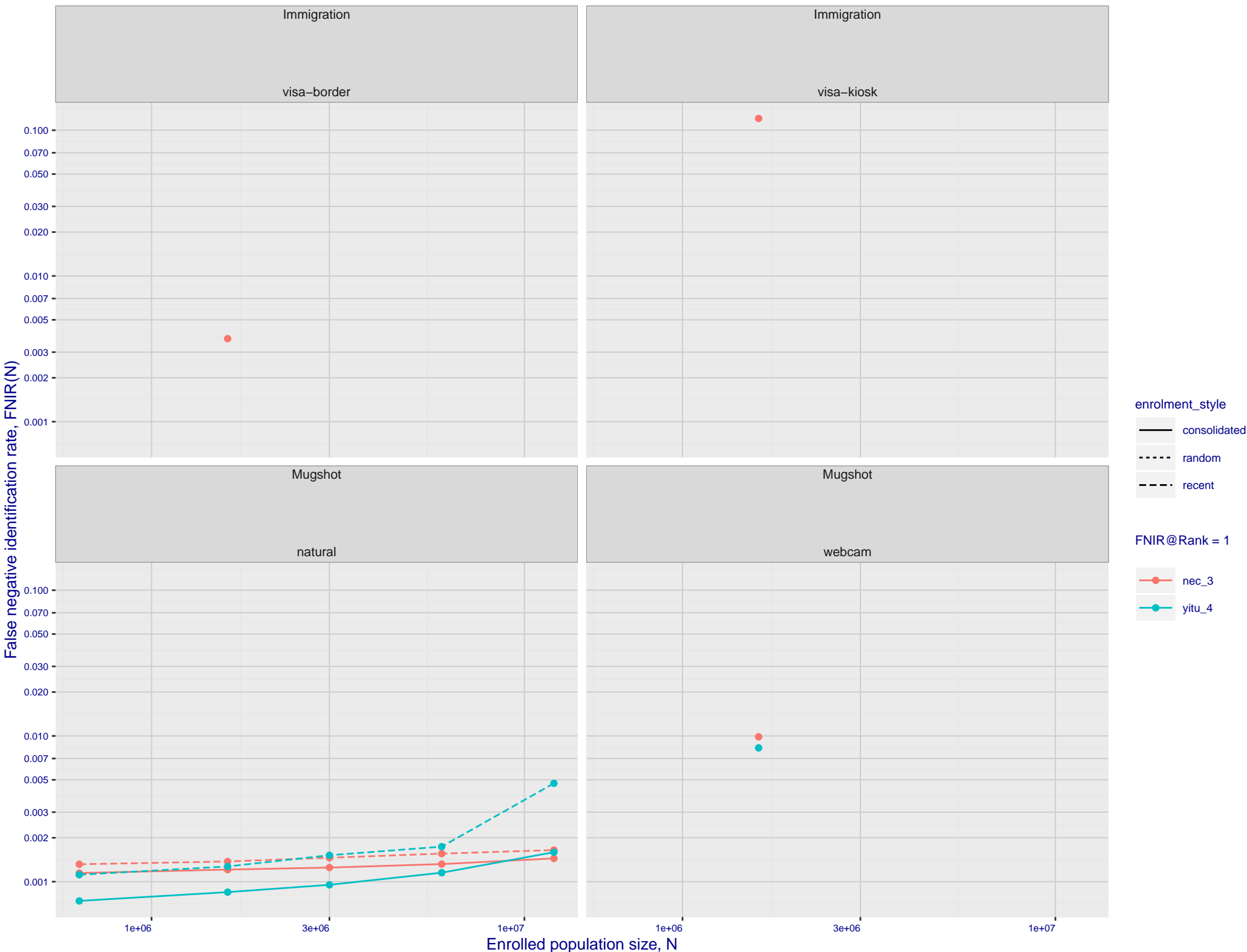
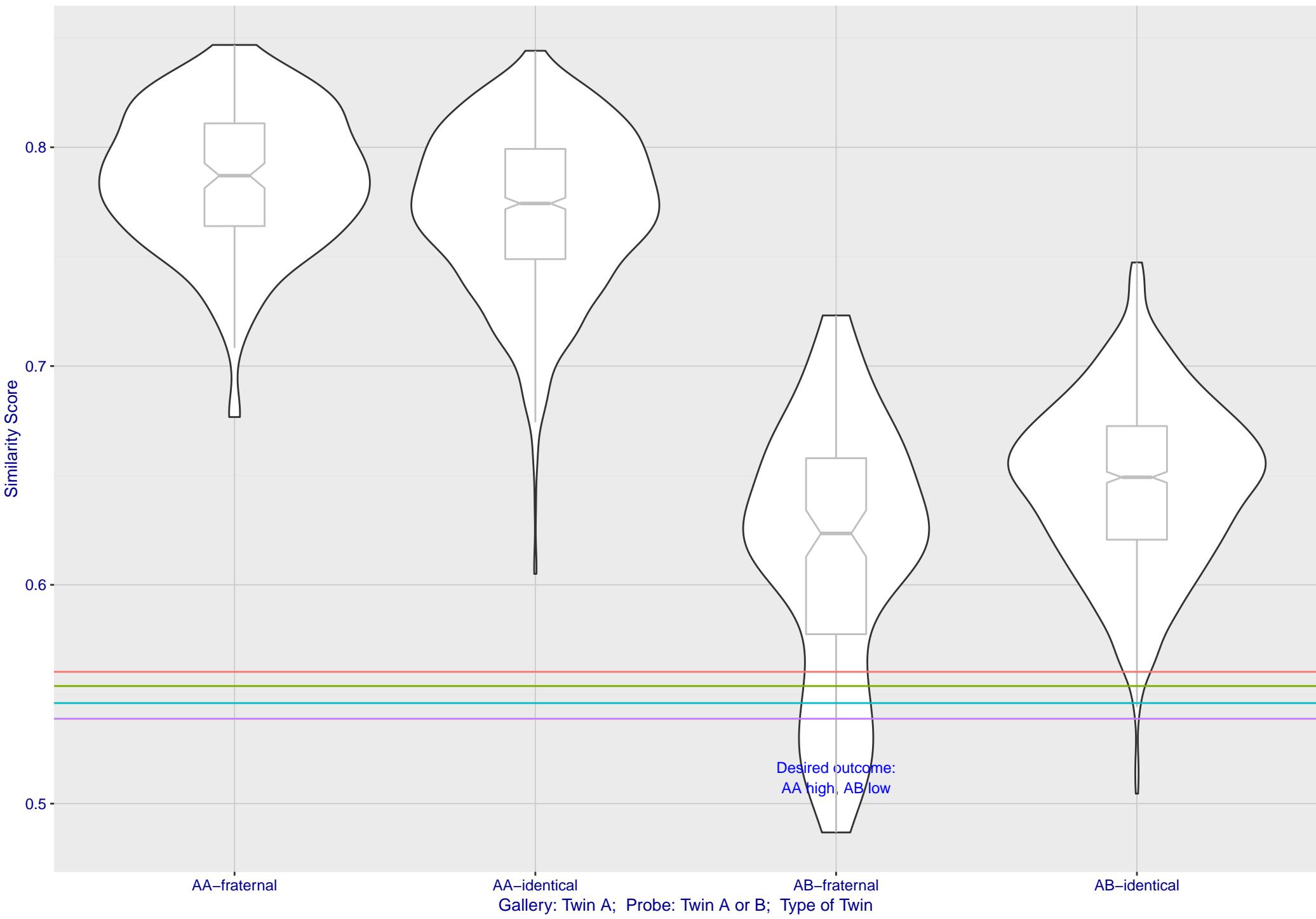I: Investigational mode: FNIR(1600000, R, 0) by probe type
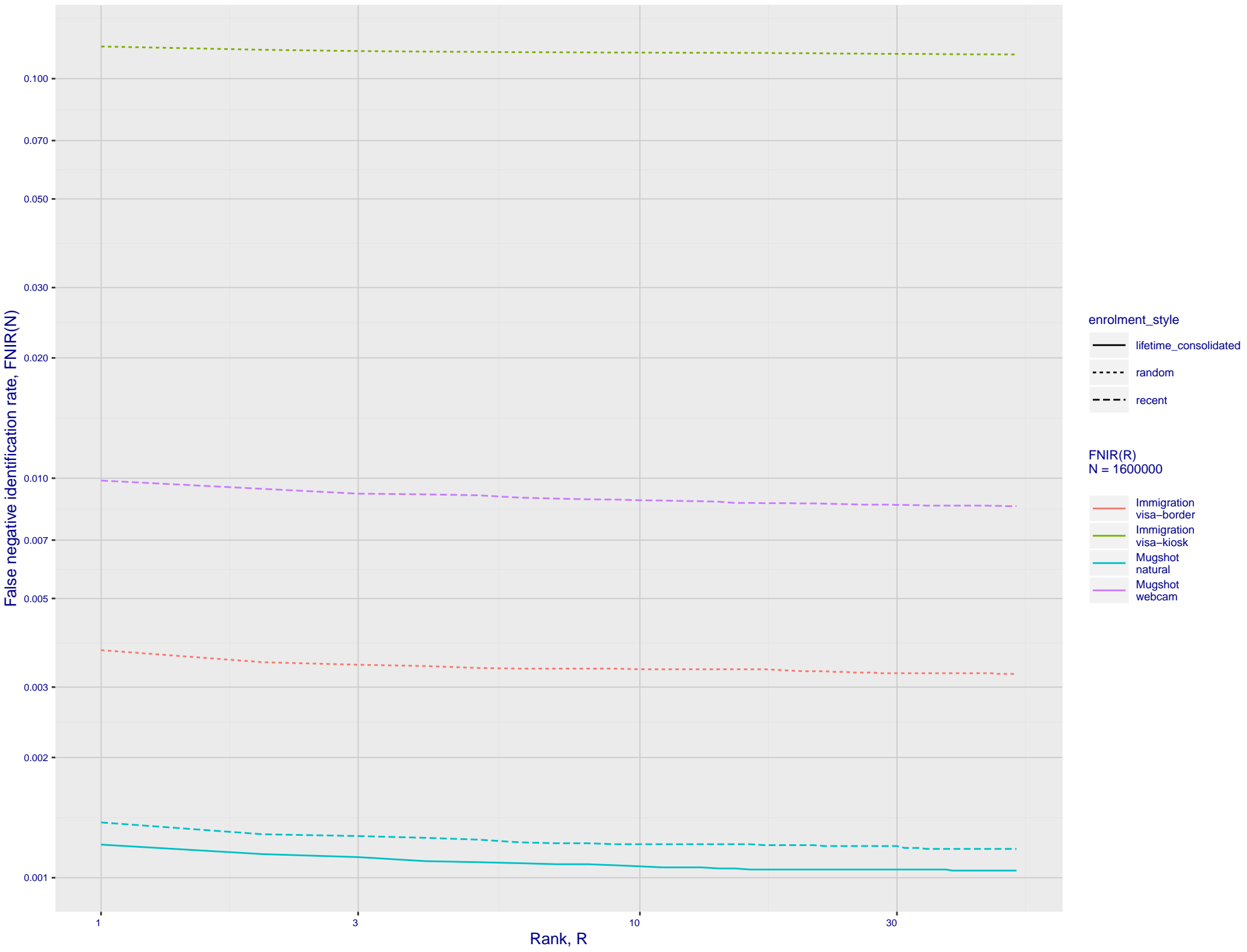
Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power−law models are fit to the first two (N,T) observations
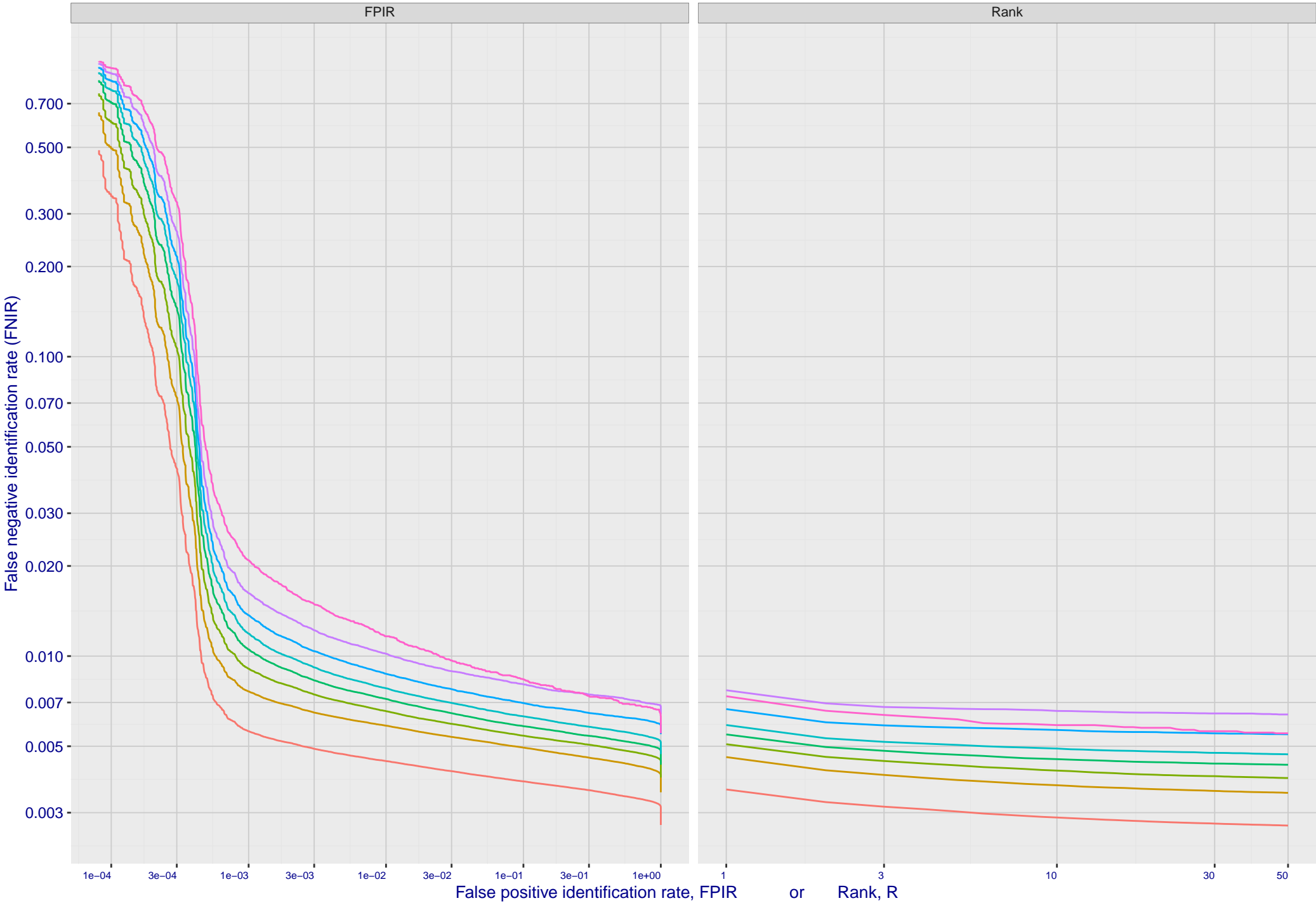
Solo–Twin and Twin–Twin similarity scores

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

Dataset: 2018 Mugshot   N = 3068801

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

FPIR | Rank

False negative identification rate (FNIR)

False positive identification rate, FPIR   or   Rank, R

N: Decline of genuine scores with ageing