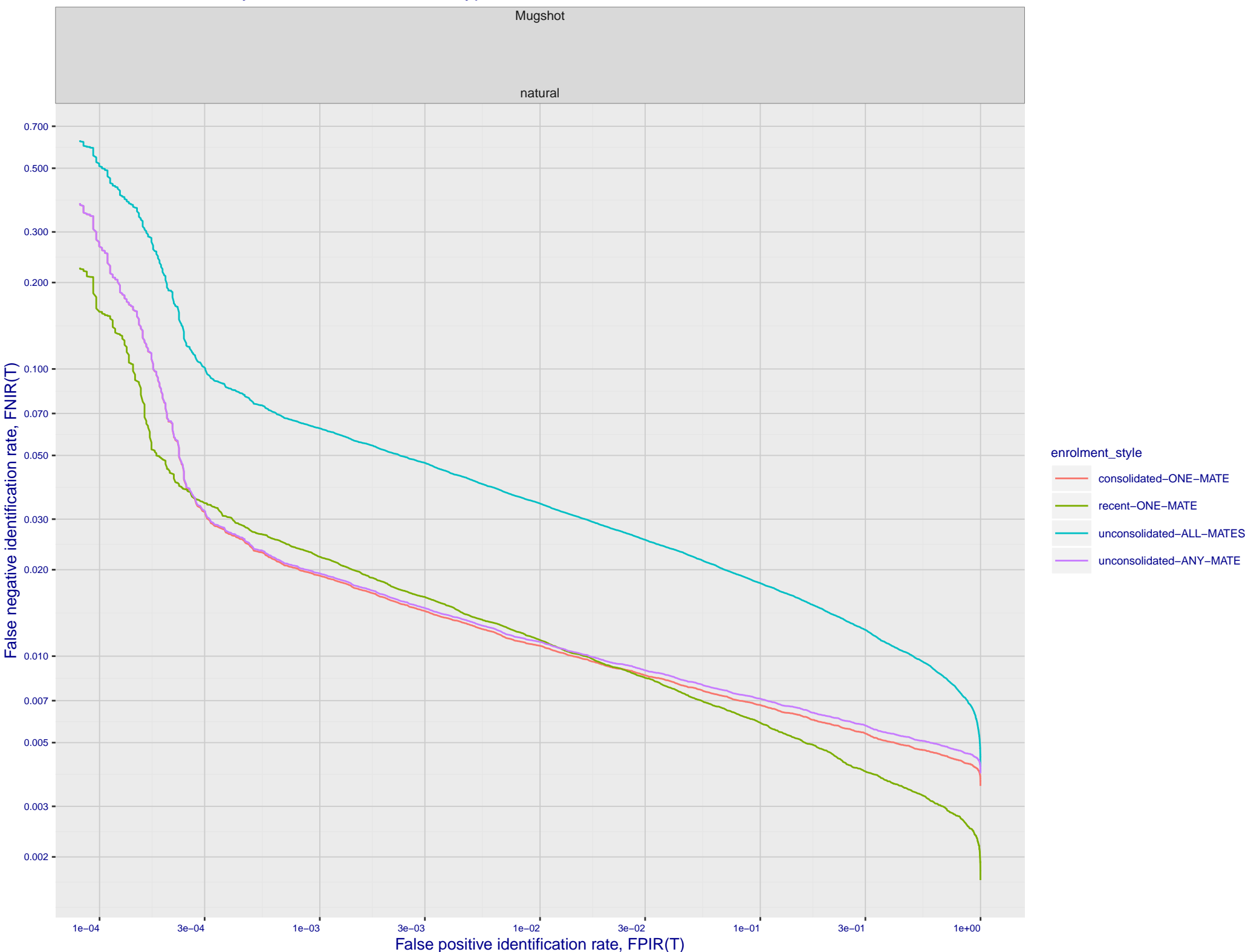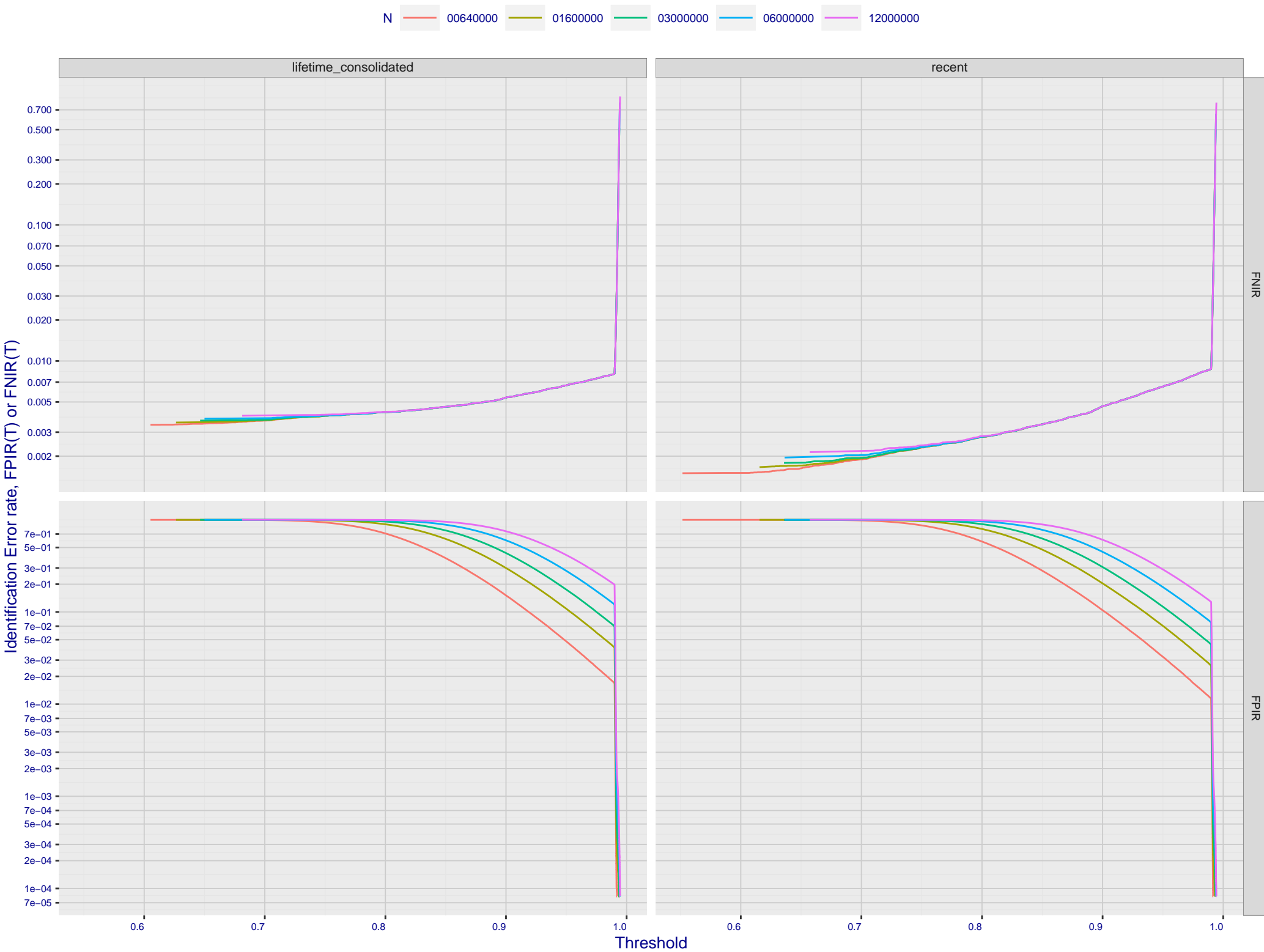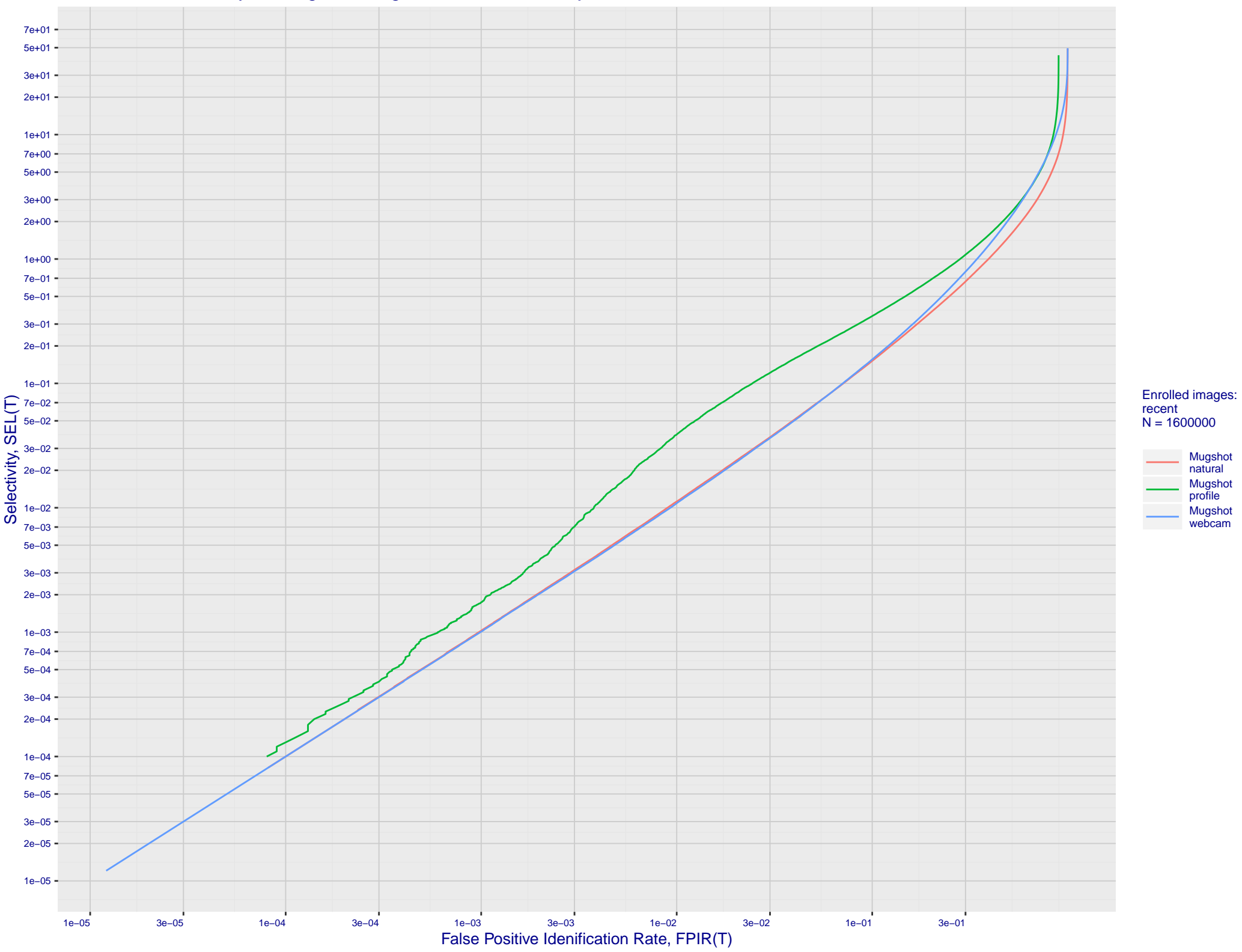A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
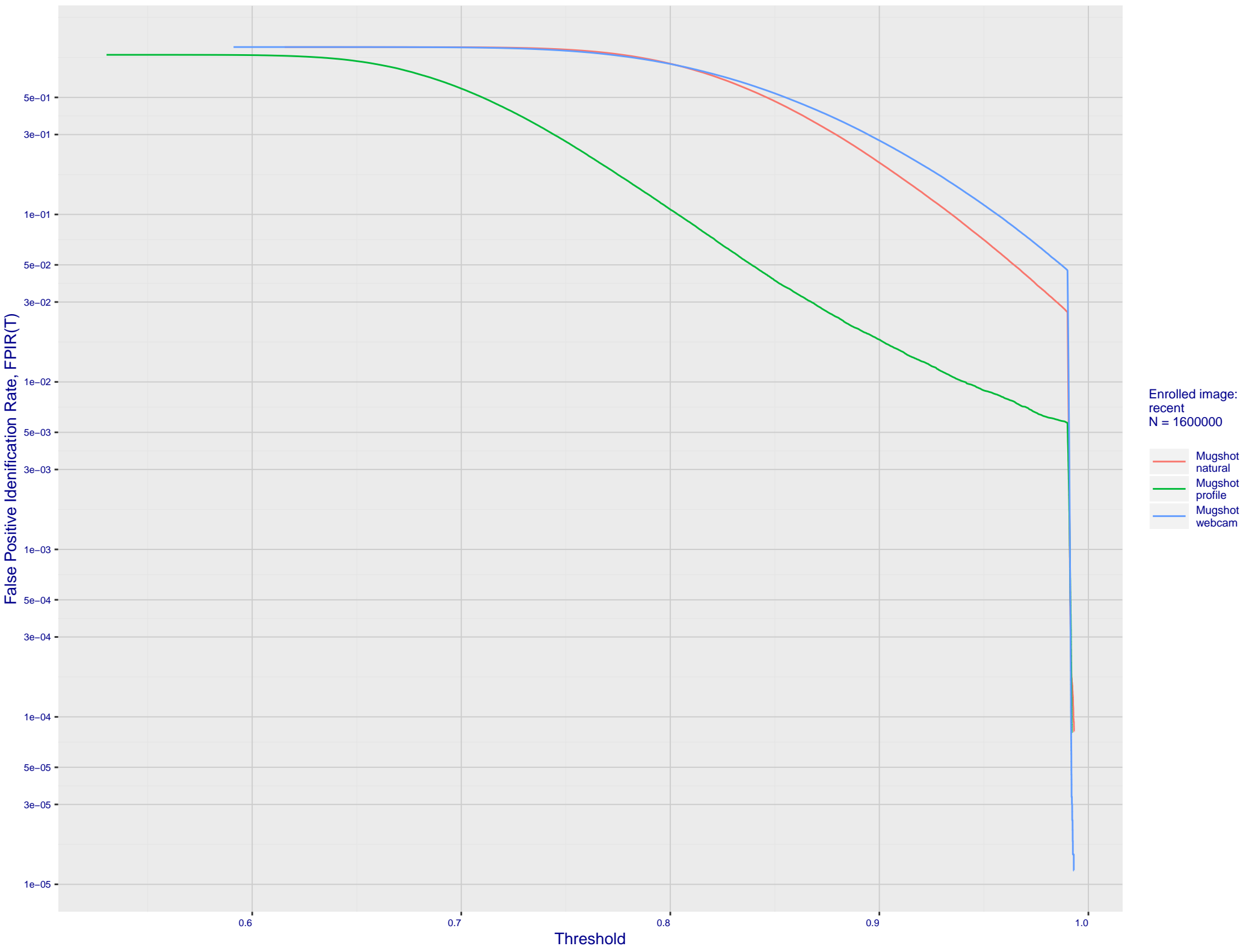
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

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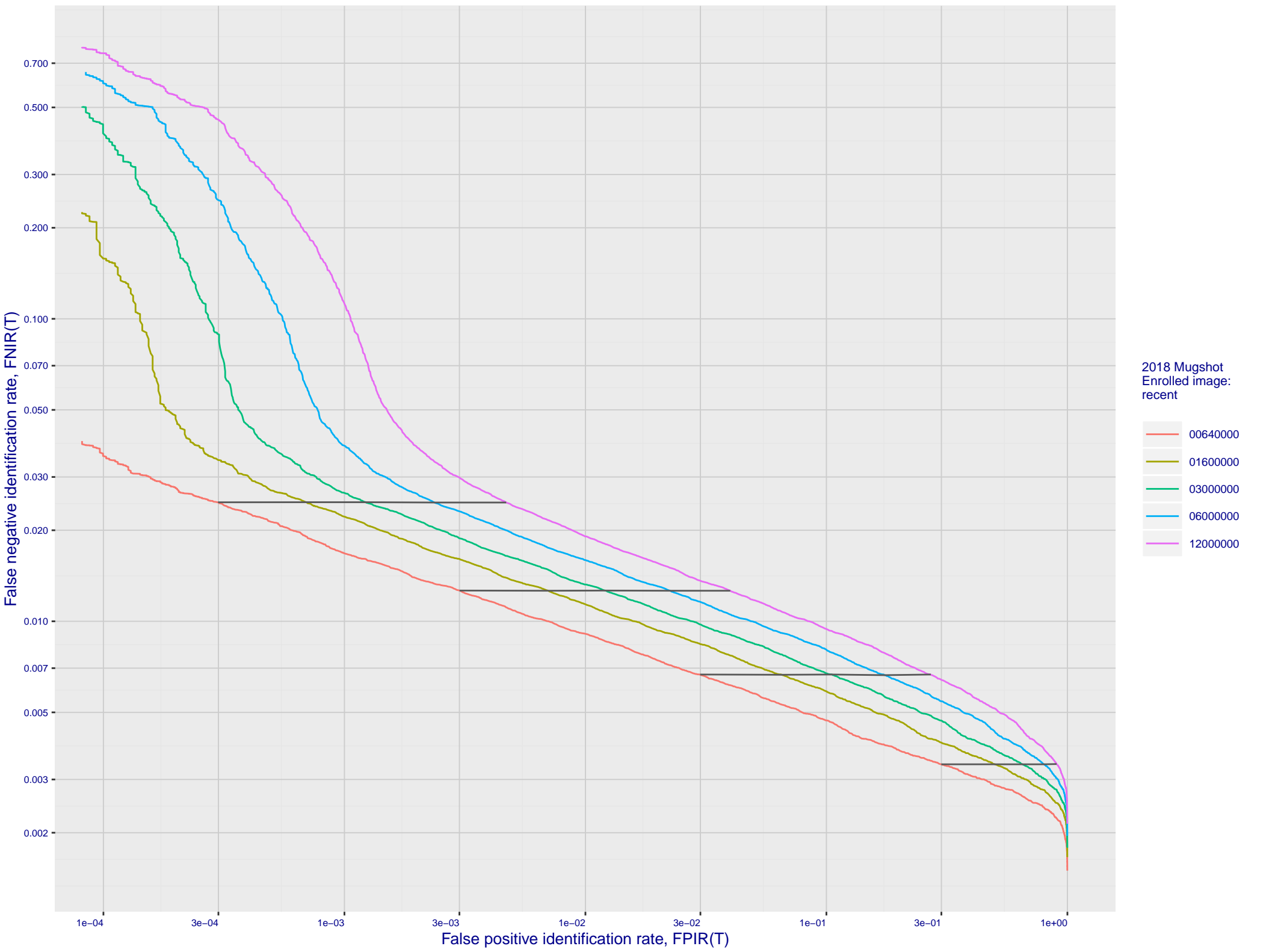
F: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
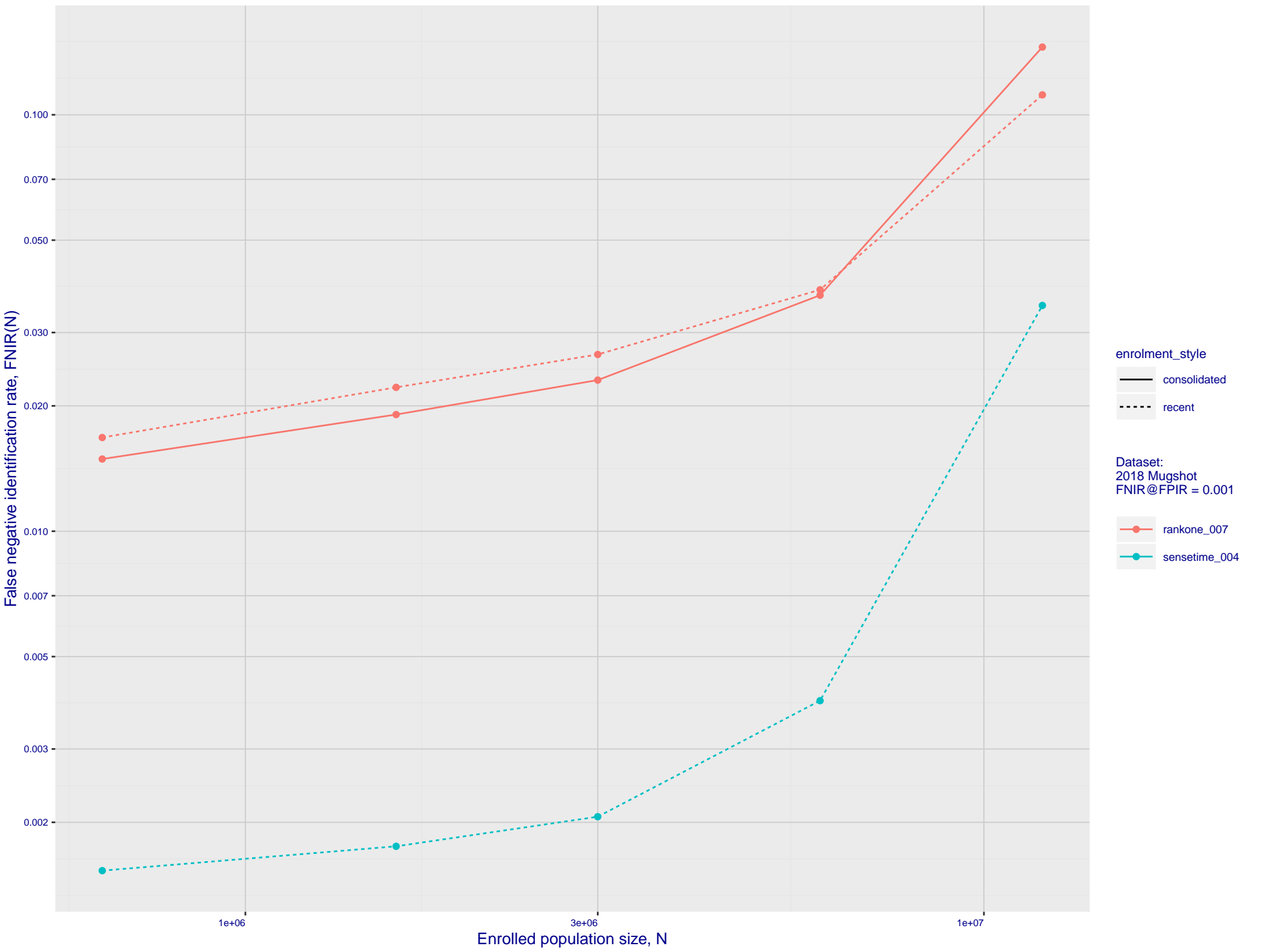
G: Datasheet

Algorithm: rankone_007

Developer: Rank One Computing

Submission Date: 2019_11_12

Template size: 165 bytes

Template time (2.5 percentile): 268 msec

Template time (median): 273 msec

Template time (97.5 percentile): 303 msec

Frontal mugshot investigation rank 45 –– FNIR(1600000, 0, 1) = 0.0034 vs. lowest 0.0010 from sensetime_004

natural investigation rank 52 –– FNIR(1600000, 0, 1) = 0.0187 vs. lowest 0.0067 from sensetime_003

natural investigation rank 138 –– FNIR(1600000, 0, 1) = 0.6434 vs. lowest 0.0492 from paravision_005

natural investigation rank 138 –– FNIR(1600000, 0, 1) = 0.6434 vs. lowest 0.0492 from paravision_005

Frontal mugshot identification rank 32 –– FNIR(1600000, T, L+1) = 0.0222 vs. lowest 0.0018 from sensetime_004

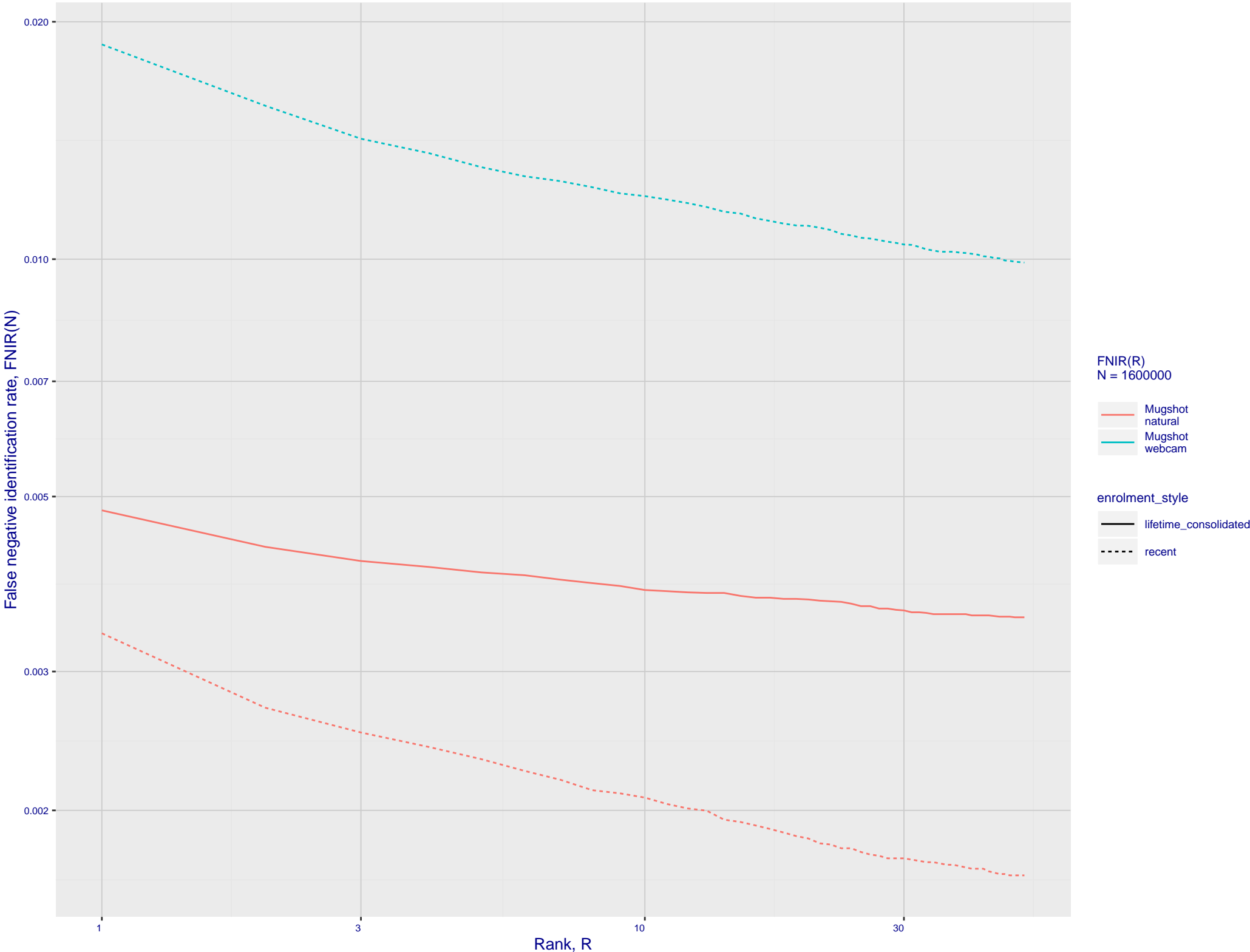natural identification rank 46 –– FNIR(1600000, T, L+1) = 0.0950 vs. lowest 0.0122 from sensetime_003

natural identification rank 37 –– FNIR(1600000, T, L+1) = 0.9263 vs. lowest 0.1020 from sensetime_004

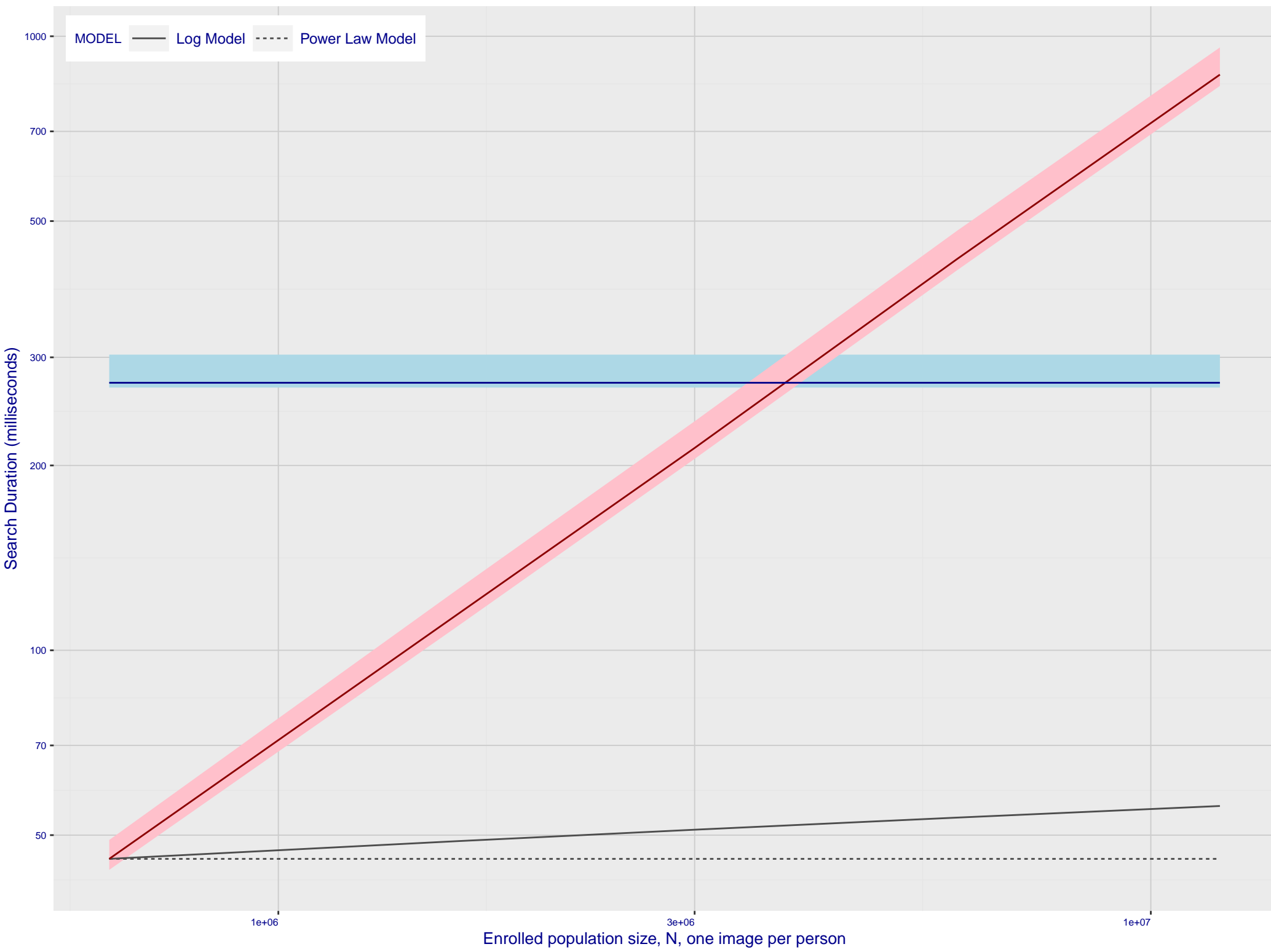H: Investigational mode: FNIR(N, 1, 0) vs. most accurate (yitu_4)
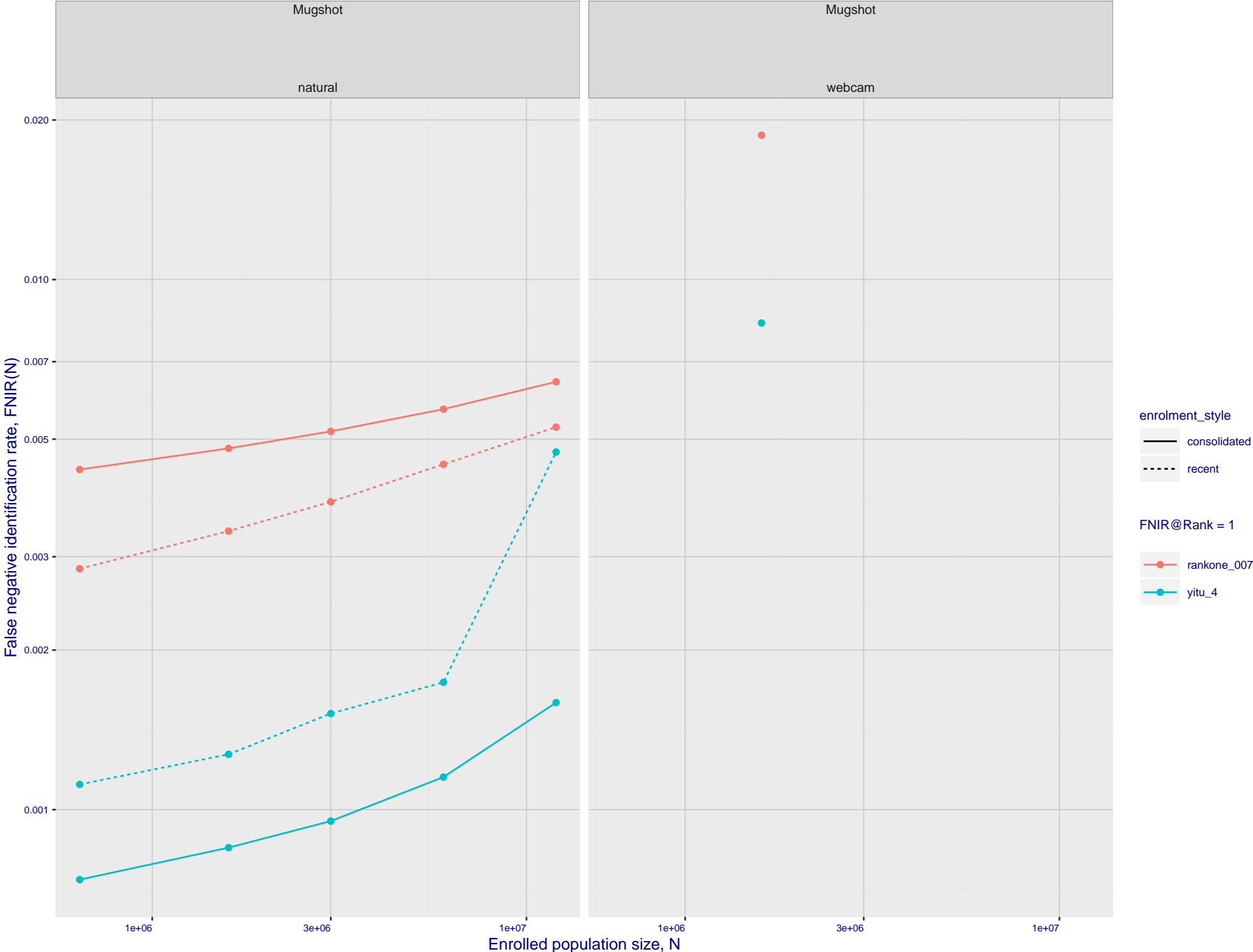
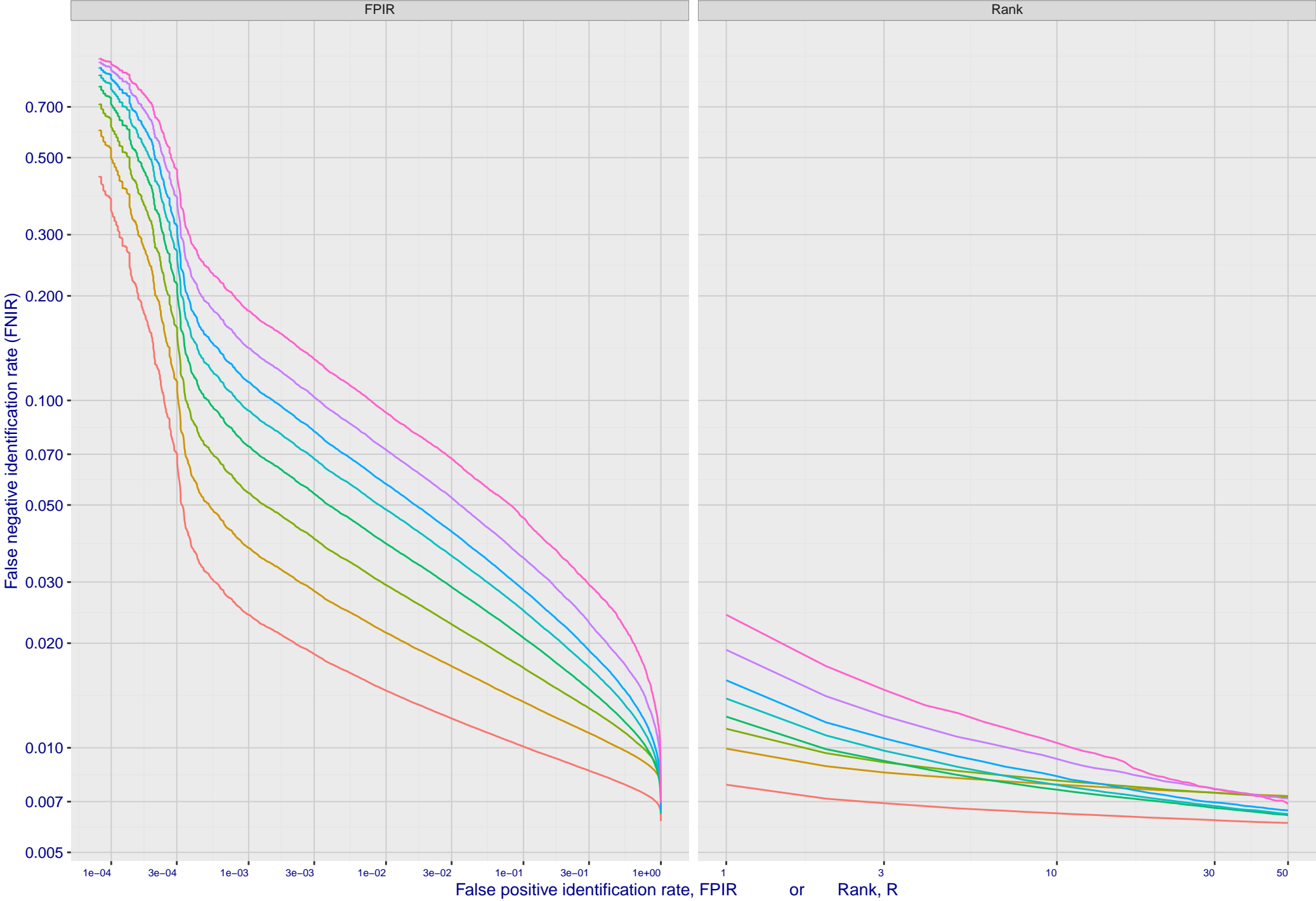I: Investigational mode: FNIR(1600000, R, 0) by probe type

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

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

N: Decline of genuine scores with ageing

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

Dataset:
2018 Mugshot
N= 3.1M
FNIR (Rank = 1)
0.20
0.15
0.10
0.05
0.00

Score

Time lapse between search and initial encounter enrollment (years)