A: Datasheet

Algorithm: allgovision_002

Developer: AllGoVision

Submission Date: 2023_03_13

Template size: 2048 bytes

Template time (2.5 percentile): 709 msec

Template time (median): 711 msec

Template time (97.5 percentile): 721 msec

Investigation:

Frontal mugshot ranking 218 (out of 402) –– FNIR(1600000, 0, 1) = 0.0067 vs. lowest 0.0008 from intema_001

Mugshot webcam ranking 212 (out of 364) –– FNIR(1600000, 0, 1) = 0.0234 vs. lowest 0.0054 from sensetime_009

Mugshot profile ranking 180 (out of 333) –– FNIR(1600000, 0, 1) = 0.5848 vs. lowest 0.0517 from sensetime_009

Immigration visa–border ranking 170 (out of 291) –– FNIR(1600000, 0, 1) = 0.0083 vs. lowest 0.0006 from cloudwalk_mt_002

Immigration visa–kiosk ranking 163 (out of 236) –– FNIR(1600000, 0, 1) = 0.1220 vs. lowest 0.0387 from cloudwalk_mt_002

Identification:

Frontal mugshot ranking 229 (out of 402) –– FNIR(1600000, T, L+1) = 0.0675, FPIR=0.001000 vs. lowest 0.0011 from idemia_010
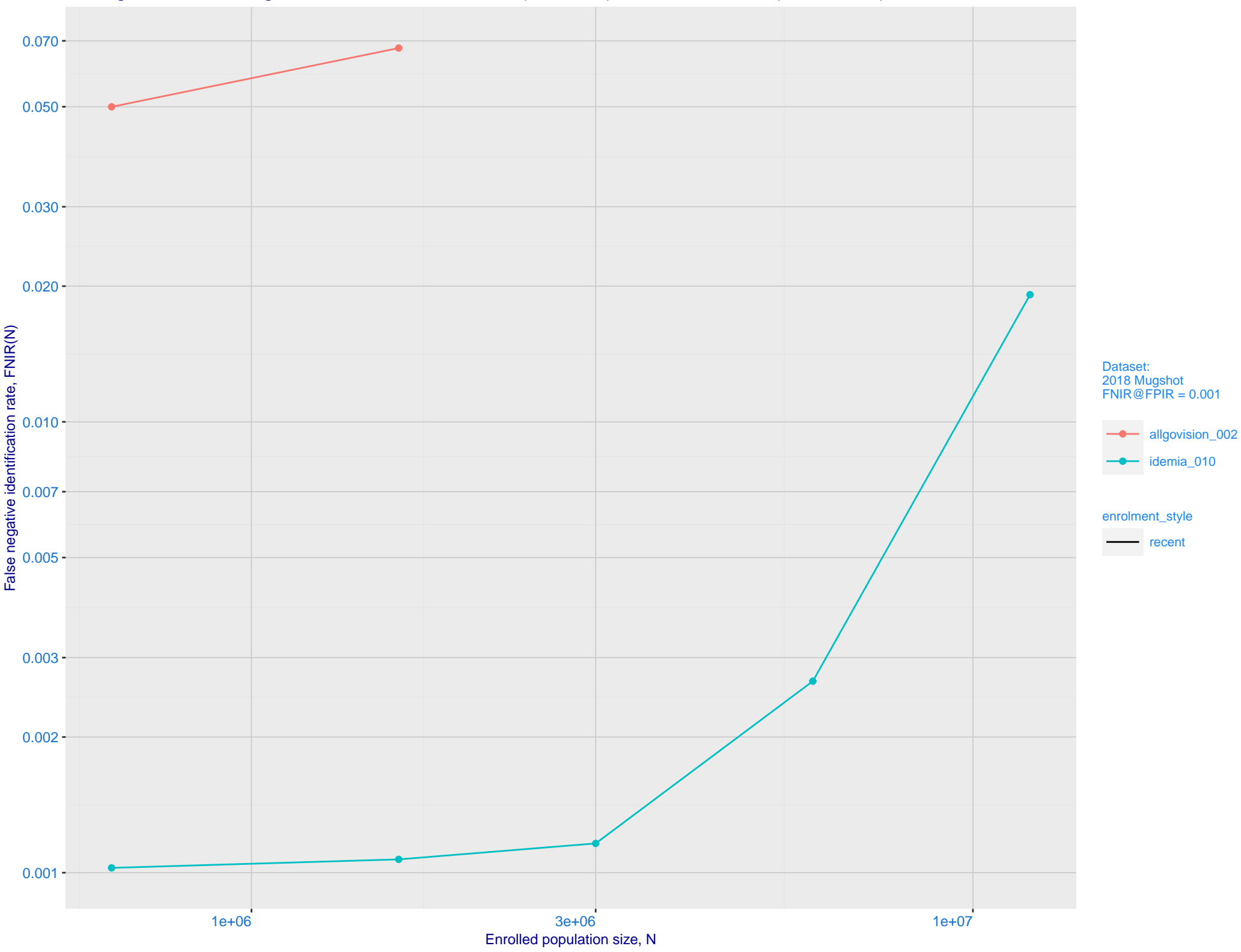
Mugshot webcam ranking 309 (out of 362) –– FNIR(1600000, T, L+1) = 0.5182, FPIR=0.001000 vs. lowest 0.0072 from sensetime_009

Mugshot profile ranking 105 (out of 332) –– FNIR(1600000, T, L+1) = 0.9504, FPIR=0.001000 vs. lowest 0.0634 from cloudwalk_mt_002
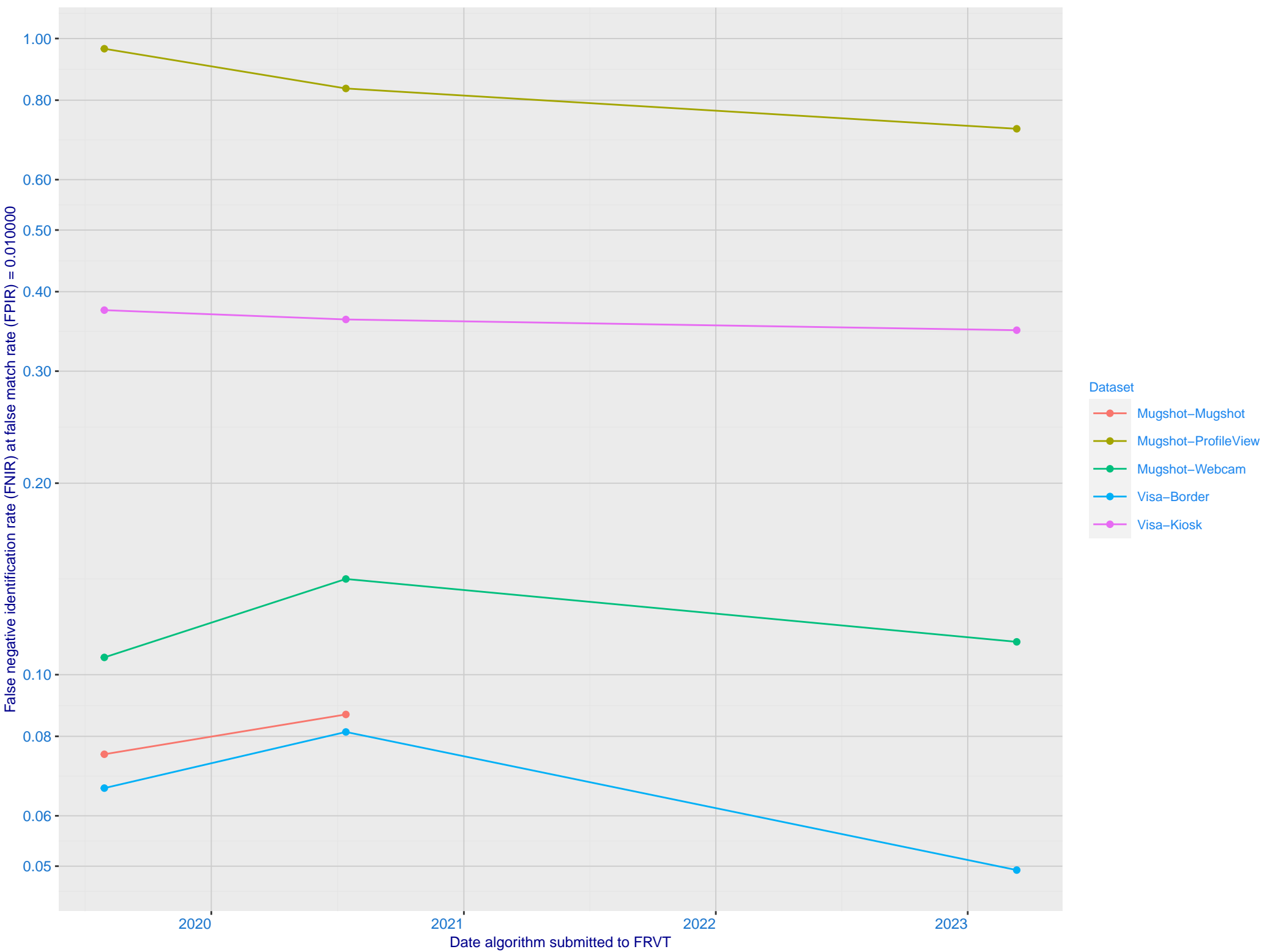
Immigration visa–border ranking 216 (out of 290) –– FNIR(1600000, T, L+1) = 0.2323, FPIR=0.001000 vs. lowest 0.0010 from cloudwalk_mt_002

Immigration visa–kiosk ranking 173 (out of 236) –– FNIR(1600000, T, L+1) = 0.6656, FPIR=0.001000 vs. lowest 0.0517 from cloudwalk_mt_002
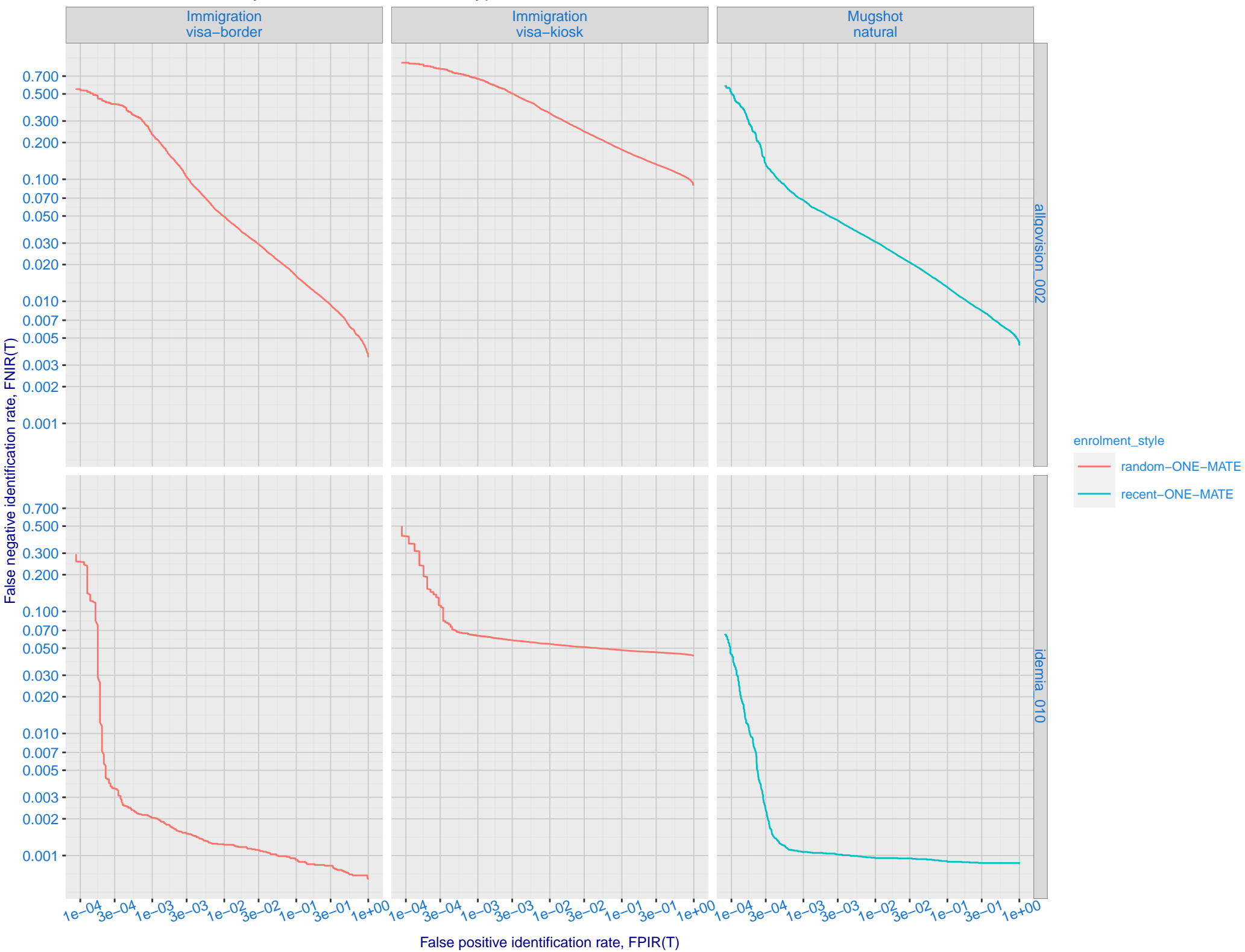
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (idemia_010)

C: Evolution of accuracy for ALLGOVISION algorithms on three datasets 2018 – present

Dataset
- Mugshot−Mugshot
- Mugshot−ProfileView
- Mugshot−Webcam
- Visa−Border
- Visa−Kiosk

False negative identification rate (FNIR) at false match rate (FPIR) = 0.010000

Date algorithm submitted to FRVT

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
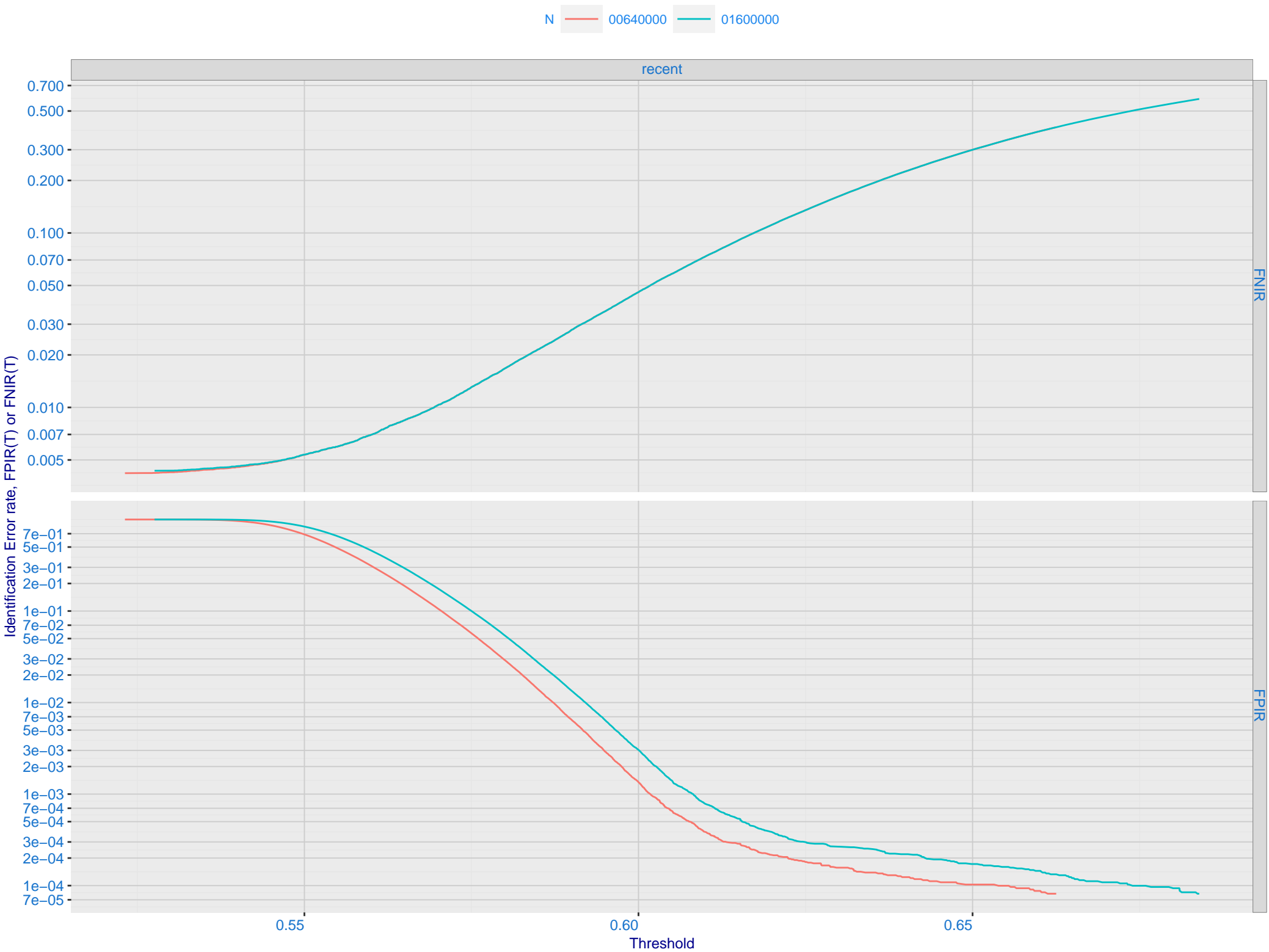
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
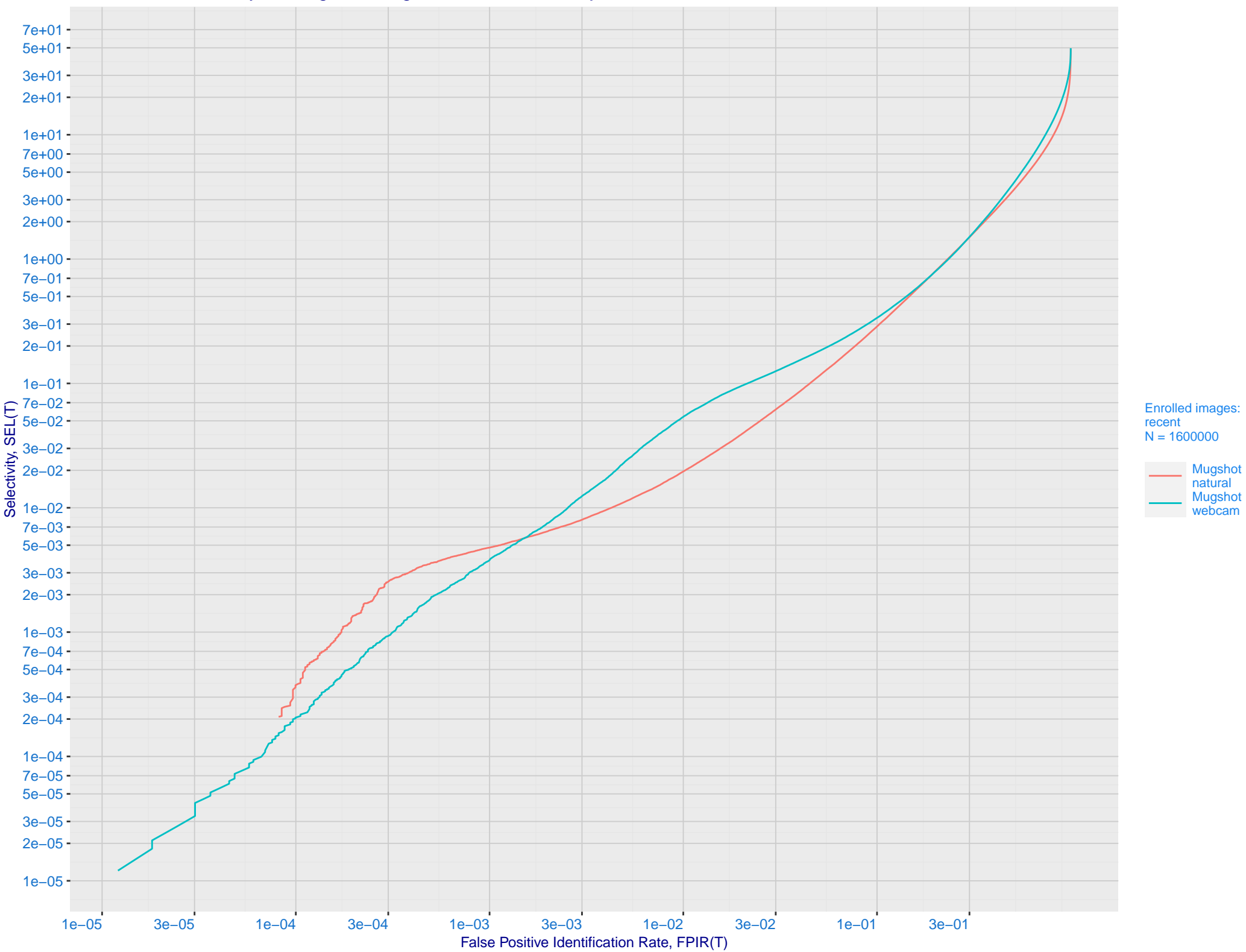
G: FPIR dependence on T by probe type for N = 1600000 subjects
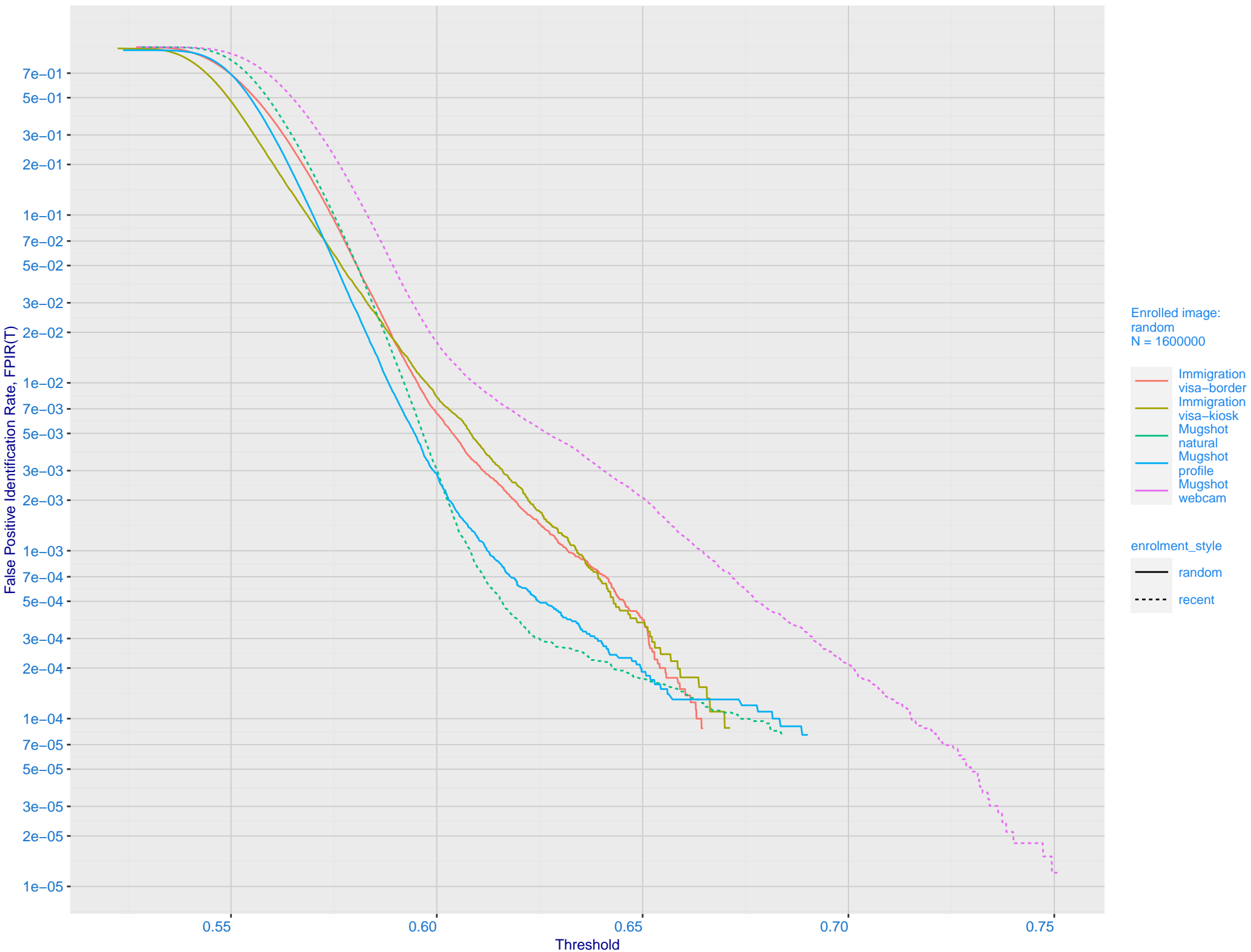
H: Reduced length candidate lists for human review
Dataset is border–border with time–lapse [10,15] YRS with N = 1600000. Probes are 10–15 years later than enrollment image
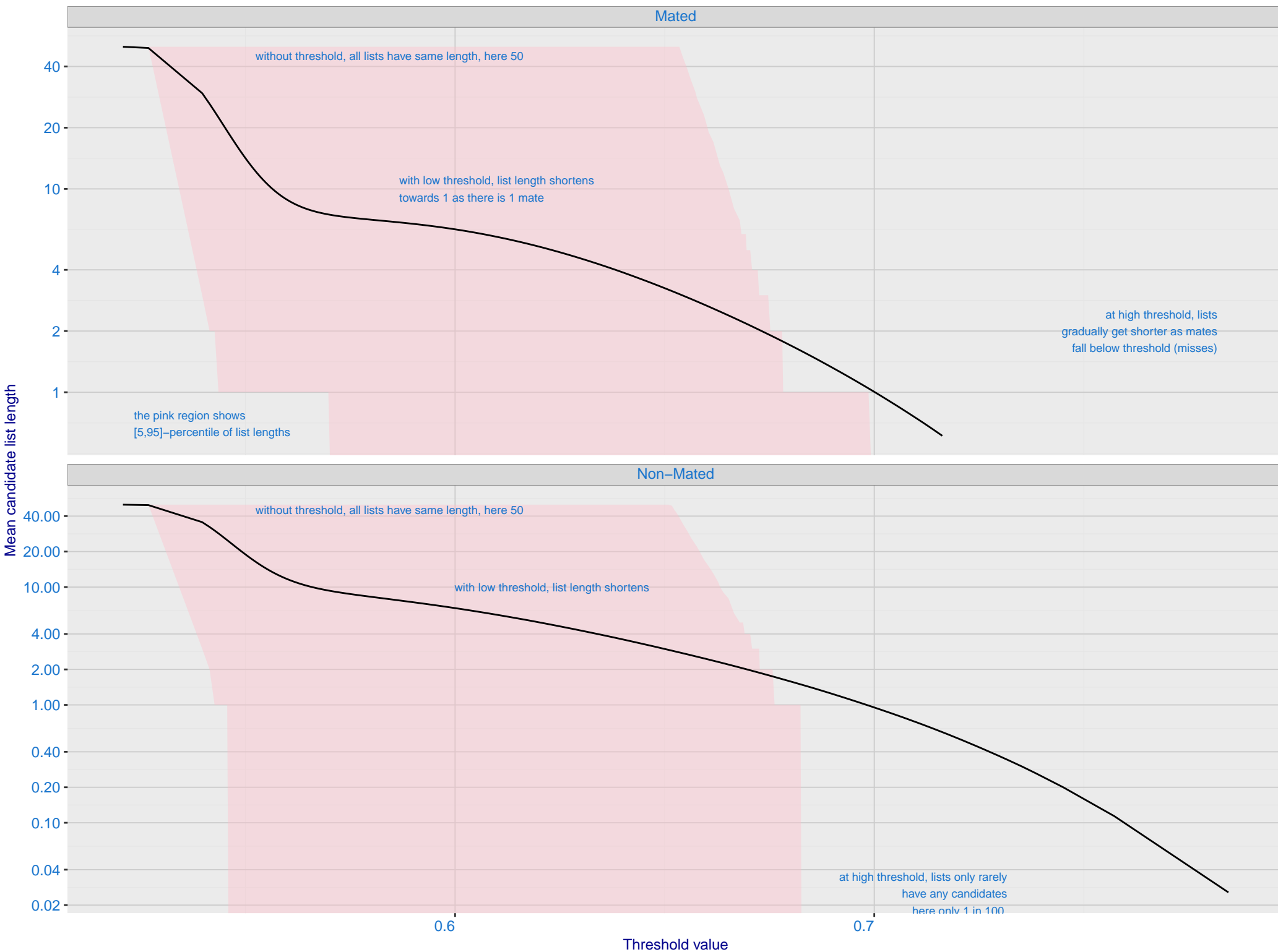
I: FNIR and FPIR dependence on threshold
Dataset is border−border with time−lapse [10,15] YRS with N = 1600000. Probes are 10−15 years later than enrollment image
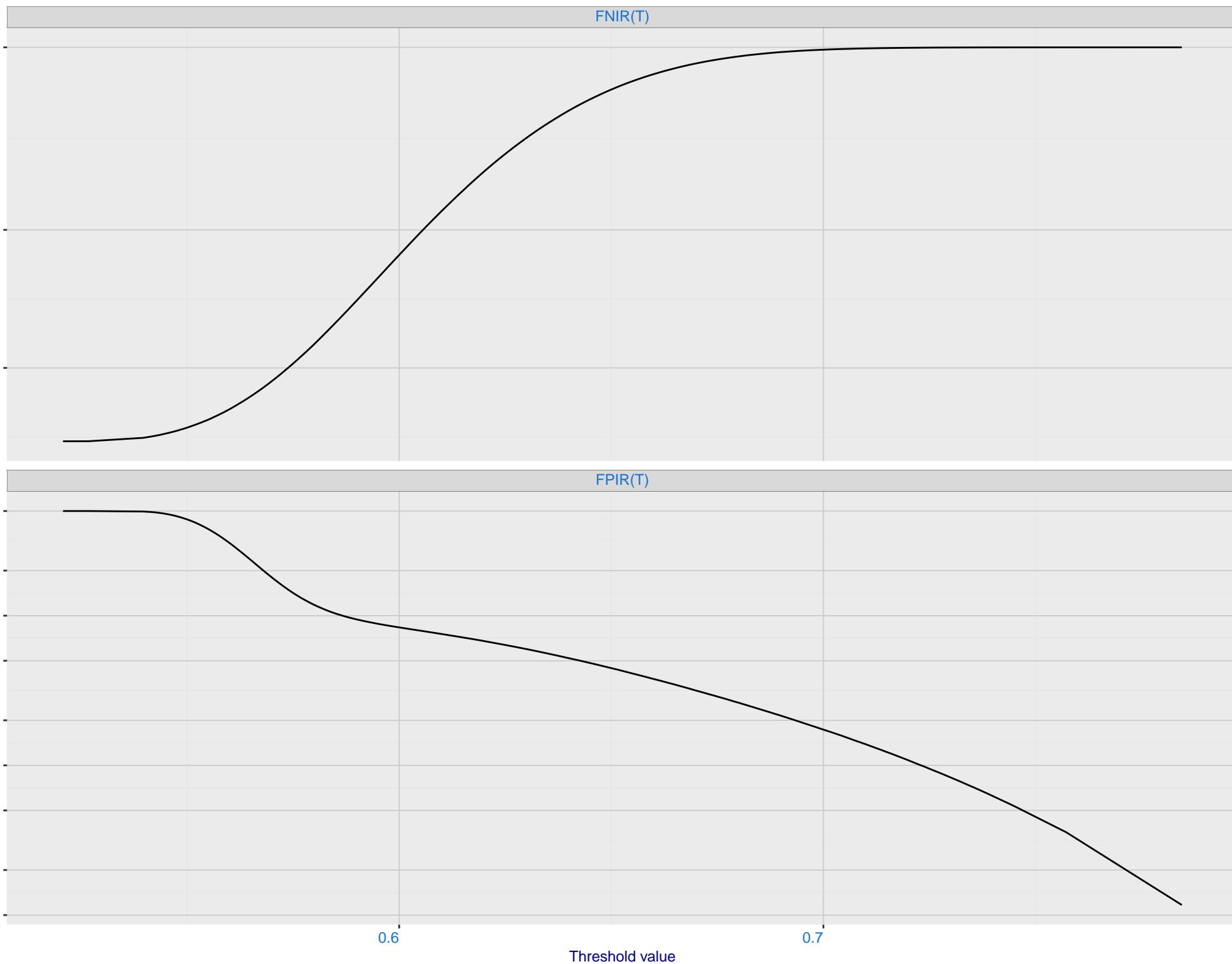
J: DET for Mugshot natural images and various N. Links connect points of equal threshold.

False negative identification rate, FNIR(T)

False positive identification rate, FPIR(T)

2018 Mugshot
Enrolled image:
recent

00640000
01600000
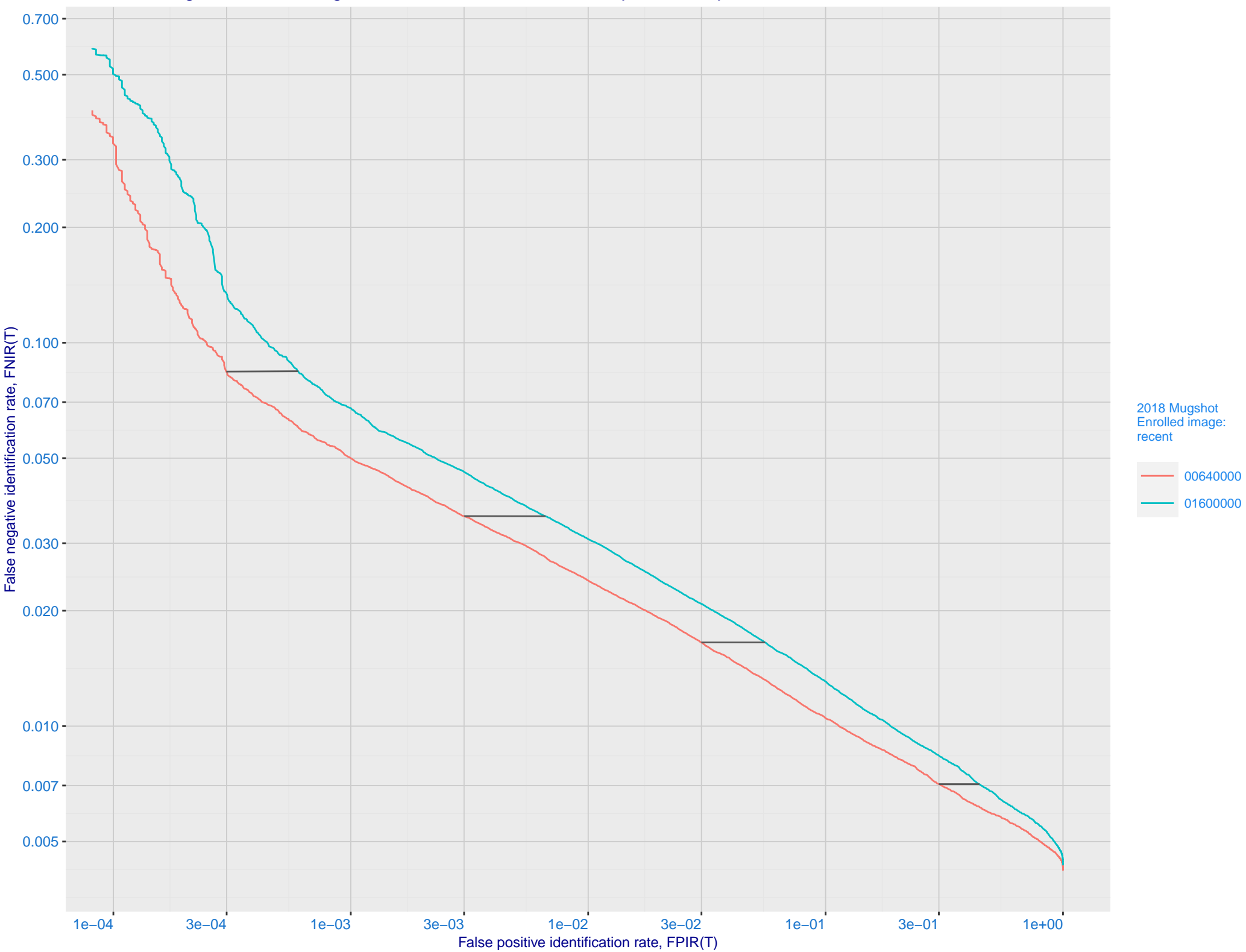
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_009)
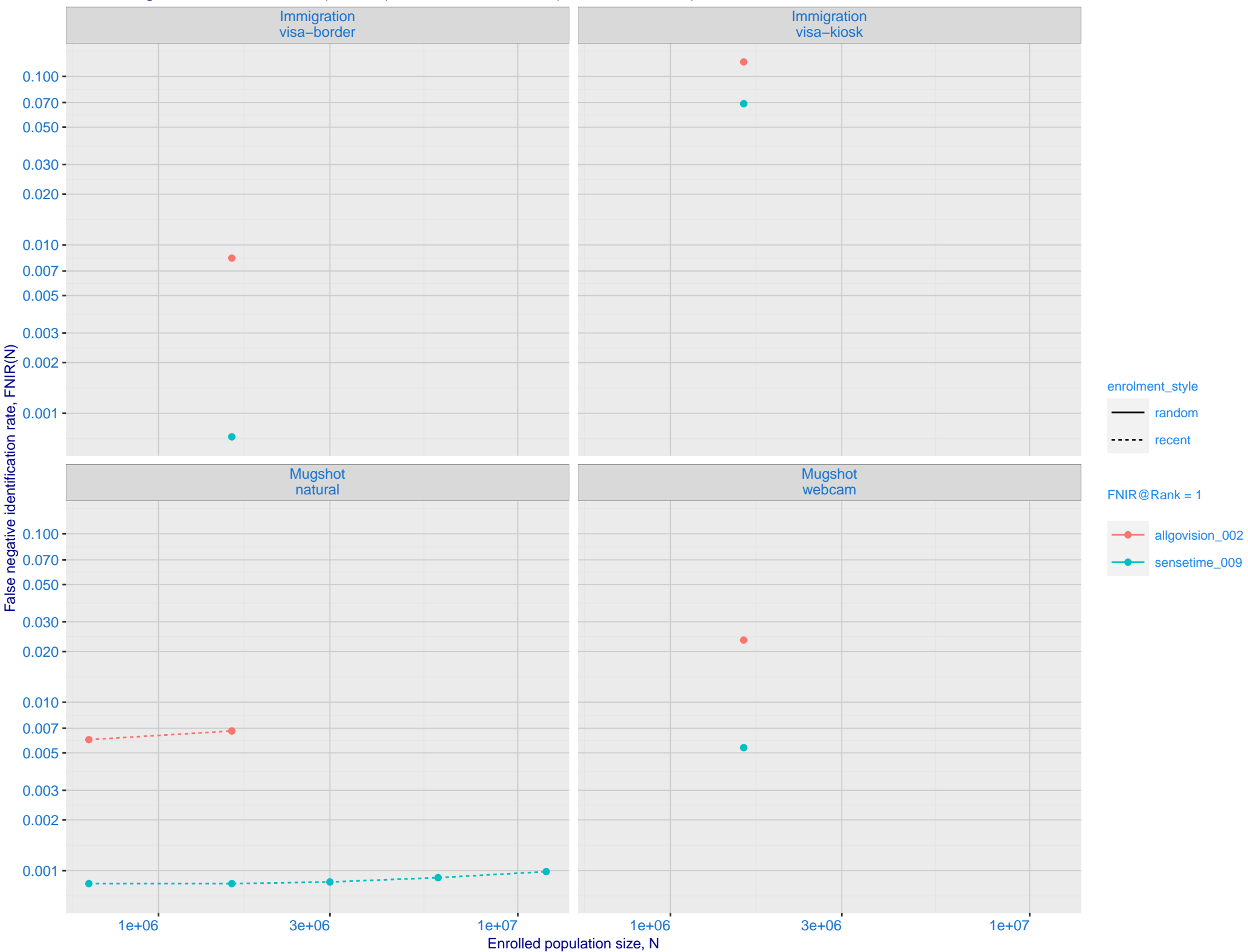
L: Investigational mode: FNIR(1600000, R, 0) by probe type
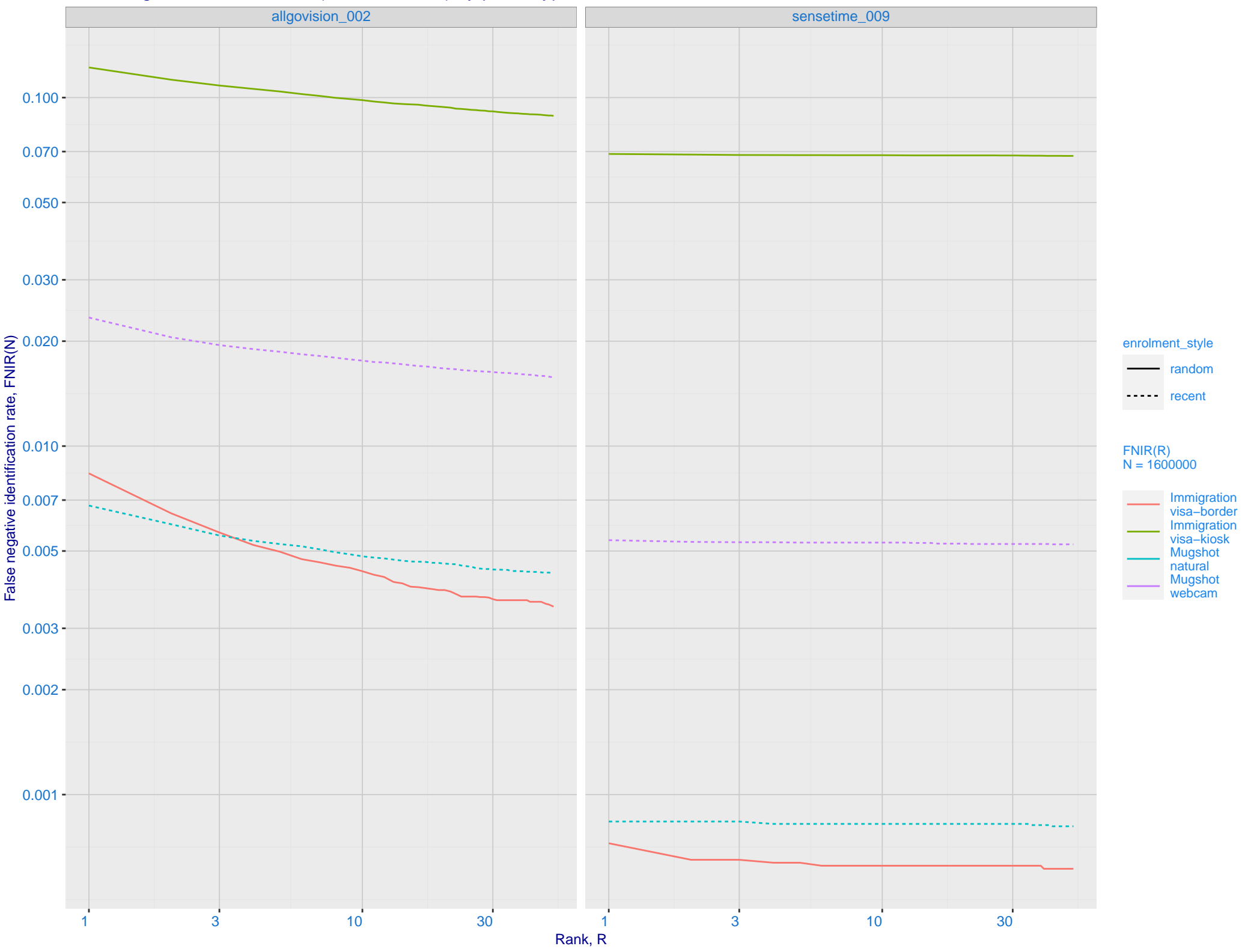
M: Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations

O: FNIR(T, N = 1.6 million) by sex, age and time–lapse. The top row gives investigational rank–1 miss rates. The bottom panels give high threshold for more lights–out identification with low FPIR.

Algorithm: allgovision_002, Dataset: Border–Crossing Ageing N = 1600000
Text encodes FNIR, Color encodes log(FNIR)

Female

Age group	10	11	12	13	14	15
(60:99]	0.145	0.126	0.142	0.142	0.137	0.143
(45:60]	0.154	0.149	0.156	0.162	0.155	0.152
(30:45]	0.168	0.167	0.175	0.185	0.179	0.177
(21:30]	0.195	0.193	0.204	0.209	0.207	0.203
(18:21]	0.238	0.222	0.231	0.244	0.233	0.220
(15:18]	0.262	0.241	0.250	0.255	0.250	0.229
(12:15]	0.292	0.274	0.269	0.285	0.298	0.249

Male — FNIR(R=1, T=0)

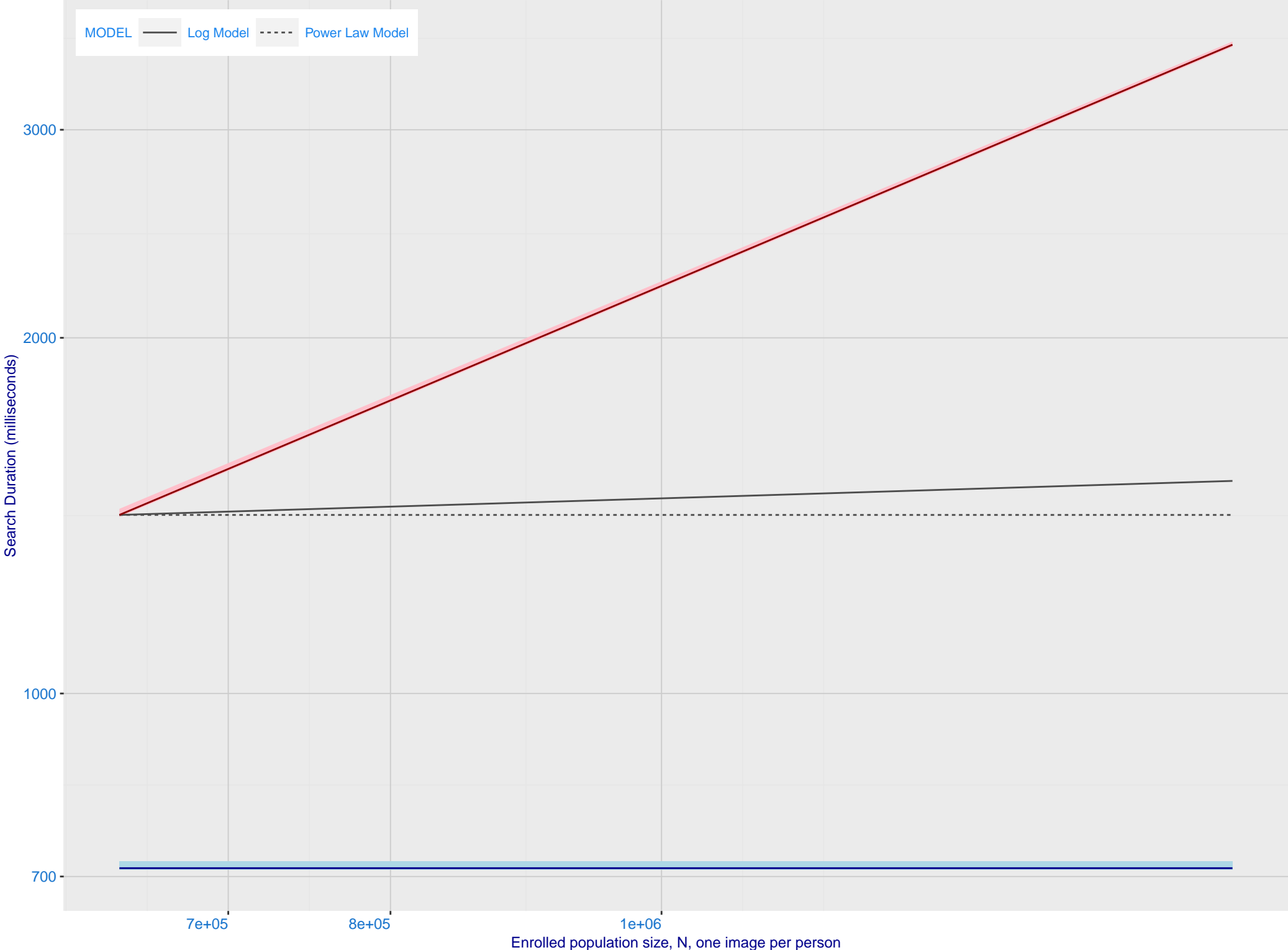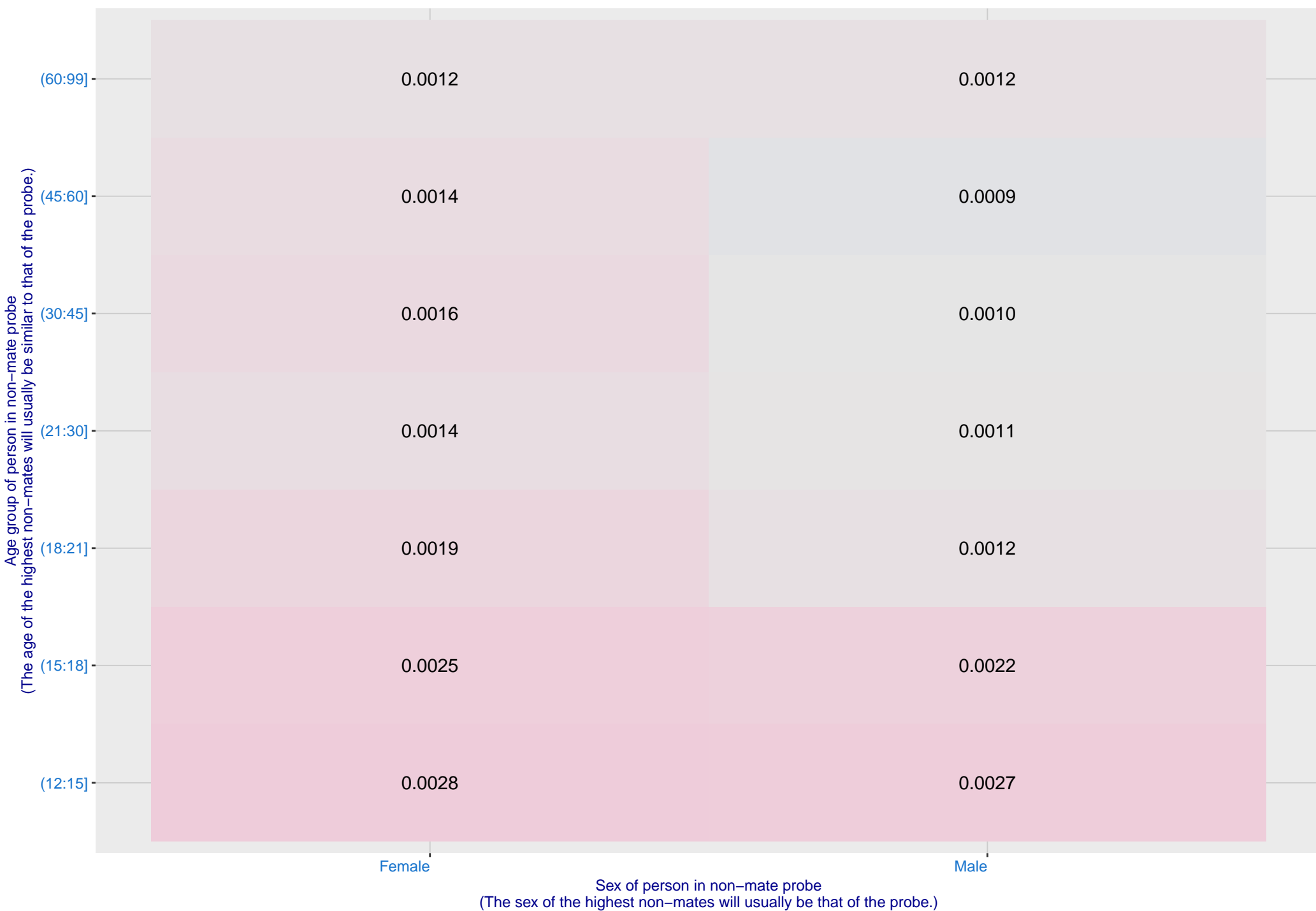| Age group	10	11	12	13	14	15
(60:99]	0.126	0.125	0.127	0.128	0.119	0.134
(45:60]	0.119	0.120	0.125	0.130	0.128	0.116
(30:45]	0.126	0.123	0.128	0.131	0.128	0.128
(21:30]	0.139	0.138	0.144	0.145	0.145	0.139
(18:21]	0.170	0.165	0.164	0.171	0.175	0.169
(15:18]	0.228	0.220	0.232	0.237	0.243	0.284
(12:15]	0.307	0.288	0.324	0.335	0.328	0.341

Female (bottom)

Age group	10	11	12	13	14	15
(60:99]	1.000	1.000	1.000	1.000	1.000	1.000
(45:60]	1.000	1.000	1.000	1.000	1.000	1.000
(30:45]	1.000	1.000	1.000	1.000	1.000	1.000
(21:30]	1.000	1.000	1.000	1.000	1.000	1.000
(18:21]	1.000	1.000	1.000	1.000	1.000	1.000
(15:18]	1.000	1.000	1.000	1.000	1.000	1.000
(12:15]	1.000	1.000	1.000	1.000	1.000	1.000

Male (bottom) — FNIR(R=50, T=0.792014), FPIR(30–45, Male) = 0.001

Age group	10	11	12	13	14	15
(60:99]	1.000	1.000	1.000	1.000	1.000	1.000
(45:60]	1.000	1.000	1.000	1.000	1.000	1.000
(30:45]	1.000	1.000	1.000	1.000	1.000	1.000
(21:30]	1.000	1.000	1.000	1.000	1.000	1.000
(18:21]	1.000	1.000	1.000	1.000	1.000	1.000
(15:18]	1.000	1.000	1.000	1.000	1.000	1.000
(12:15]	1.000	1.000	1.000	1.000	1.000	1.000

Age group at time of enrollment

Time between probe and enrollment (years)

P: FPIR(N = 1.6 million) by sex and age. It is typical for false positive identification rates to be higher in women except in their teens.

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