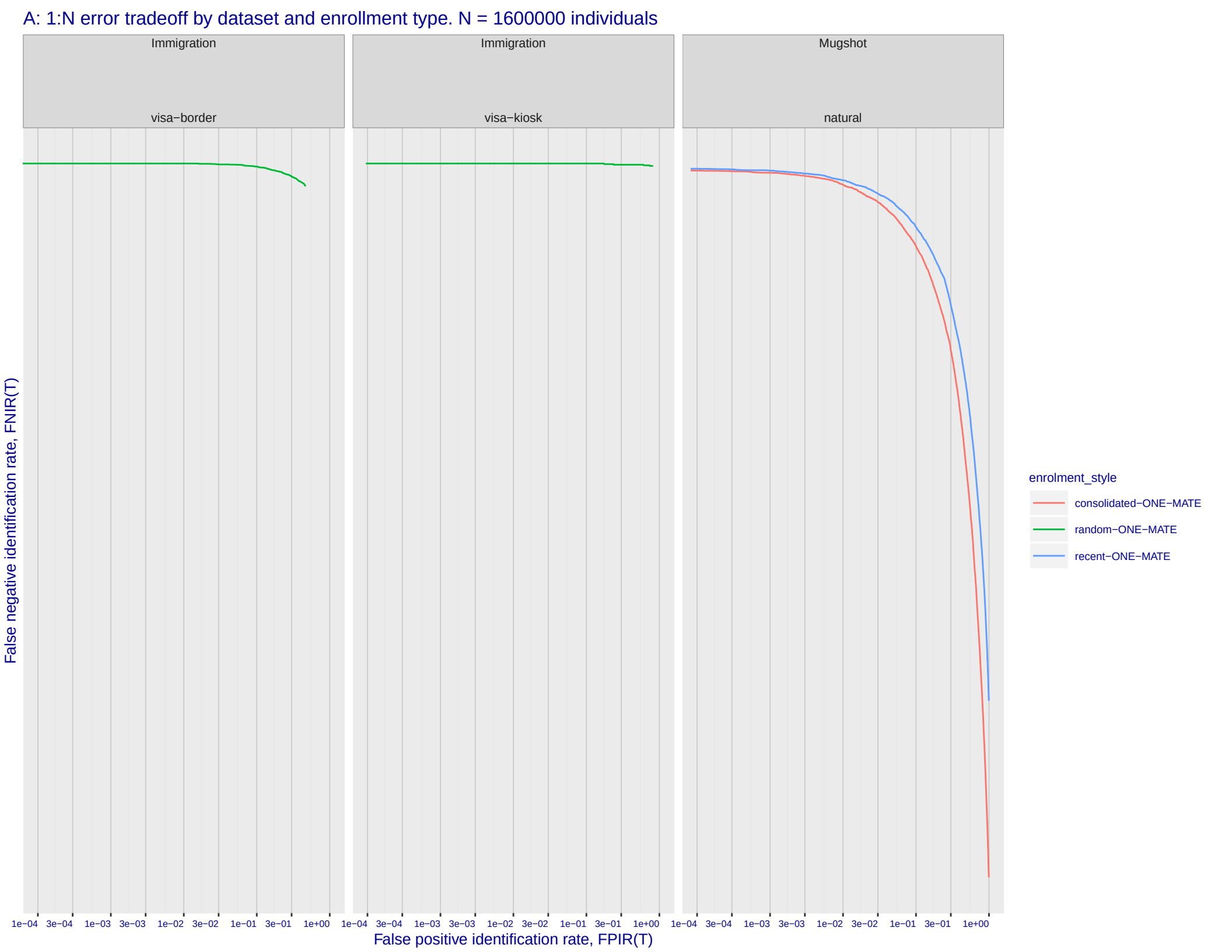
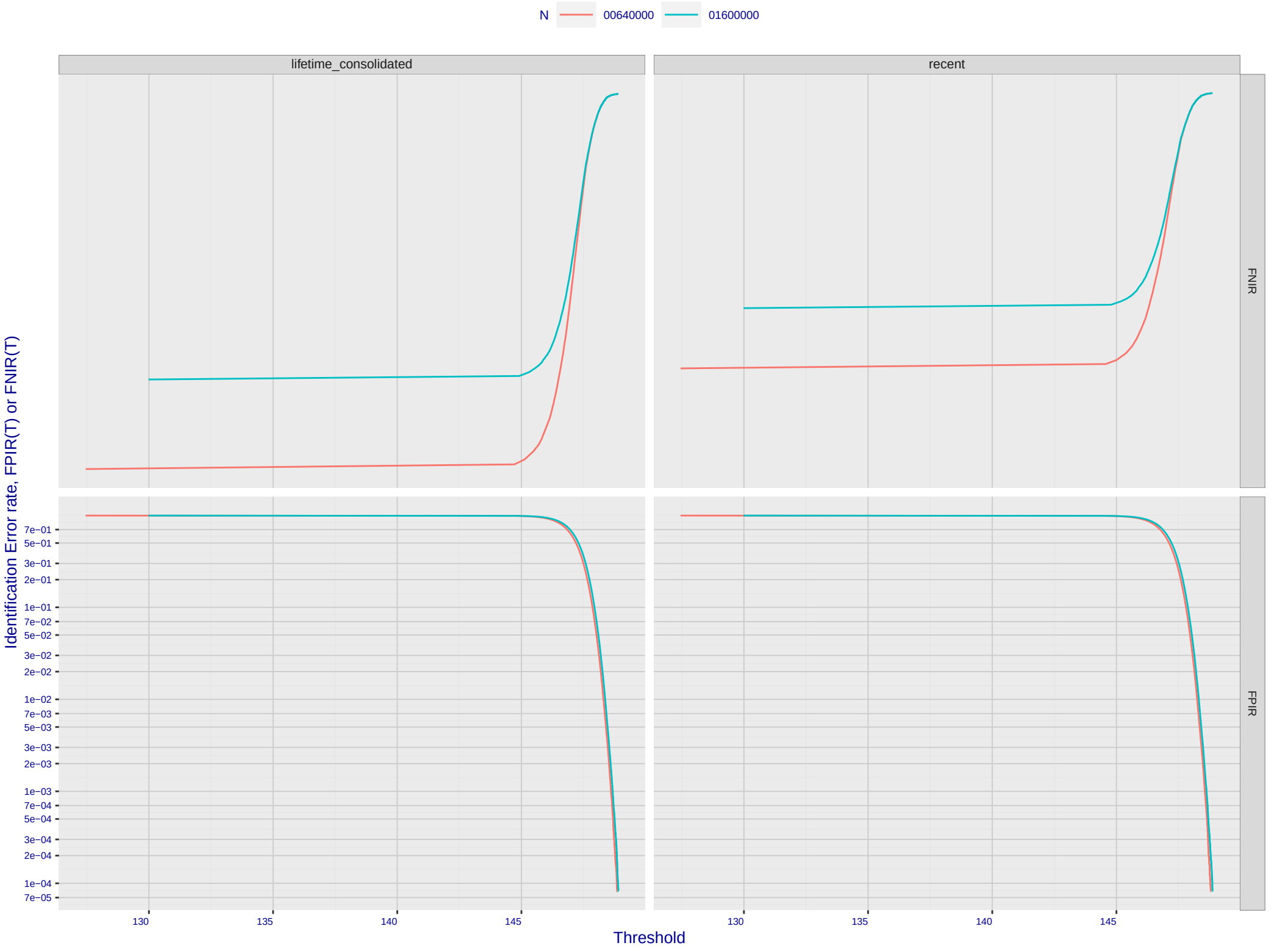
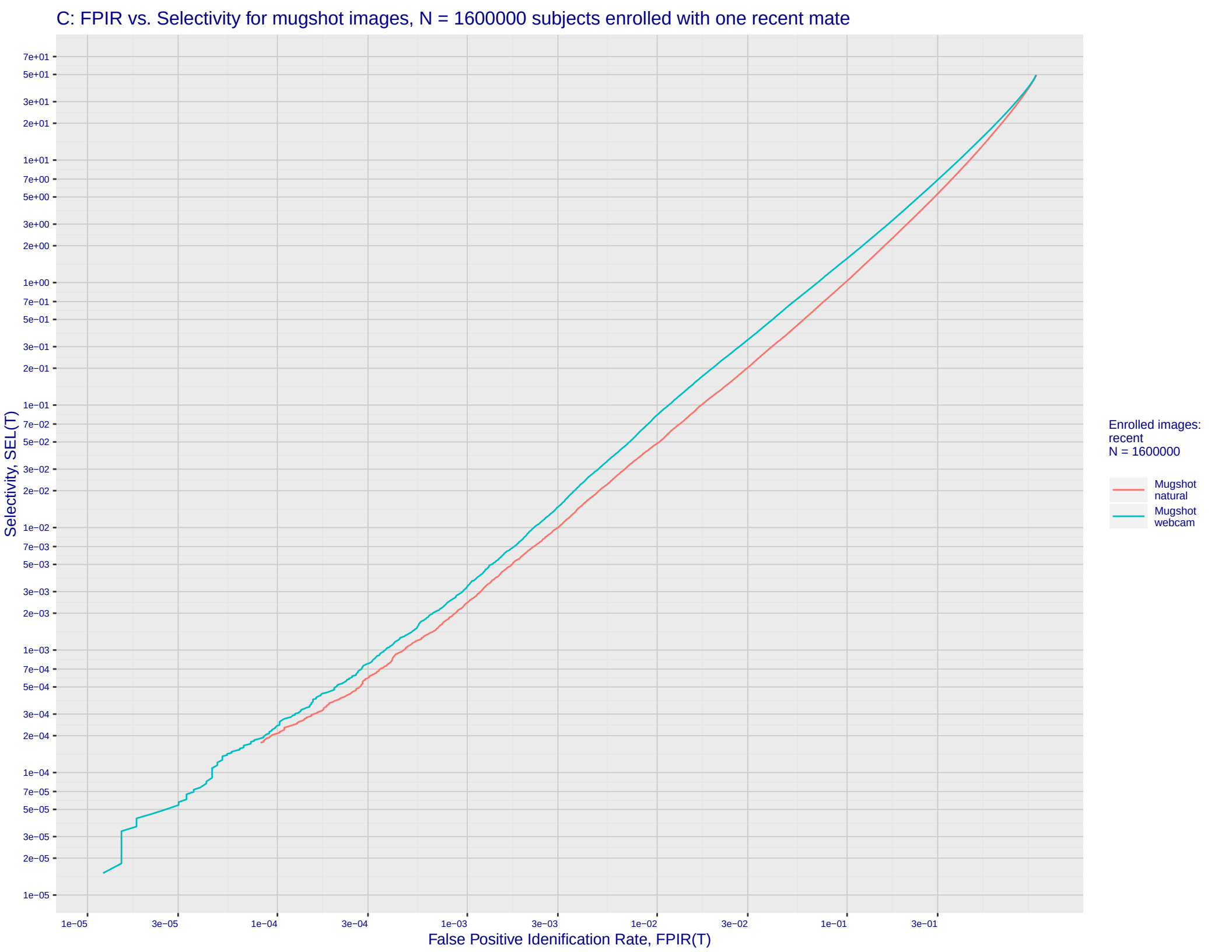
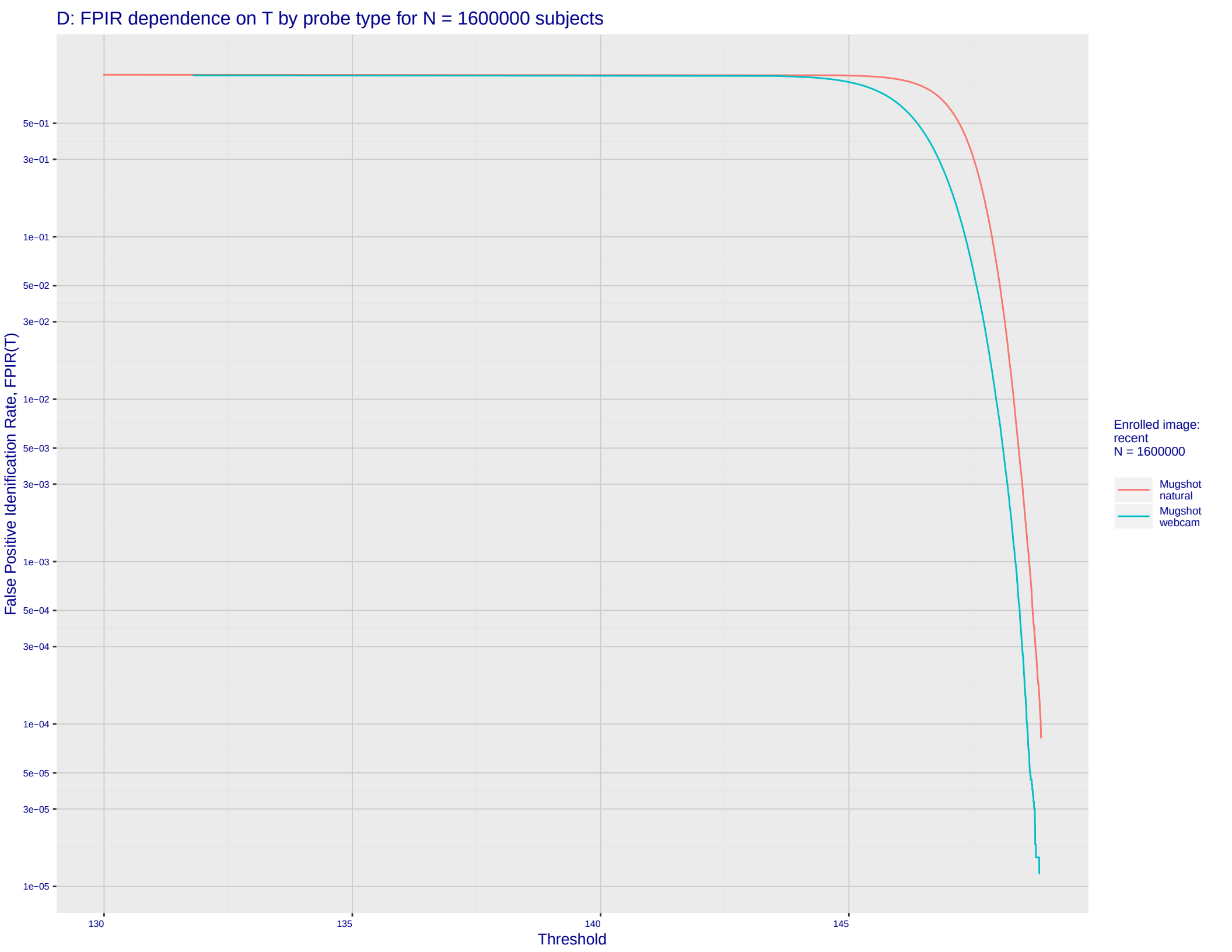

A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
Immigration
visa−border
Immigration
visa−kiosk
Mugshot
natural
False negative identification rate, FNIR(T)
1e−04 3e−04 1e−03 3e−03 1e−02 3e−02 1e−01 3e−01 1e+00
False positive identification rate, FPIR(T)
enrolment_style
consolidated−ONE−MATE
random−ONE−MATE
recent−ONE−MATE

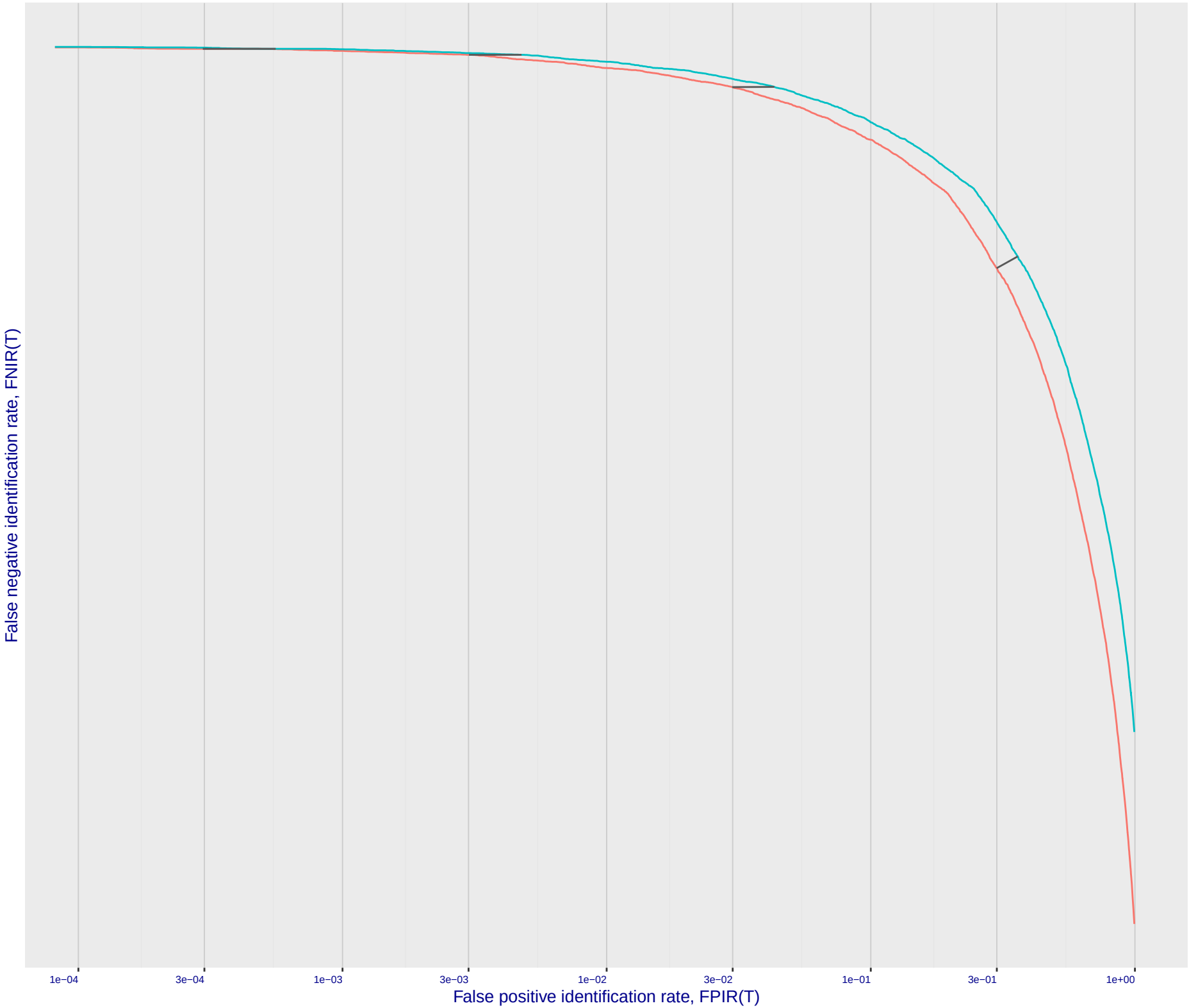
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

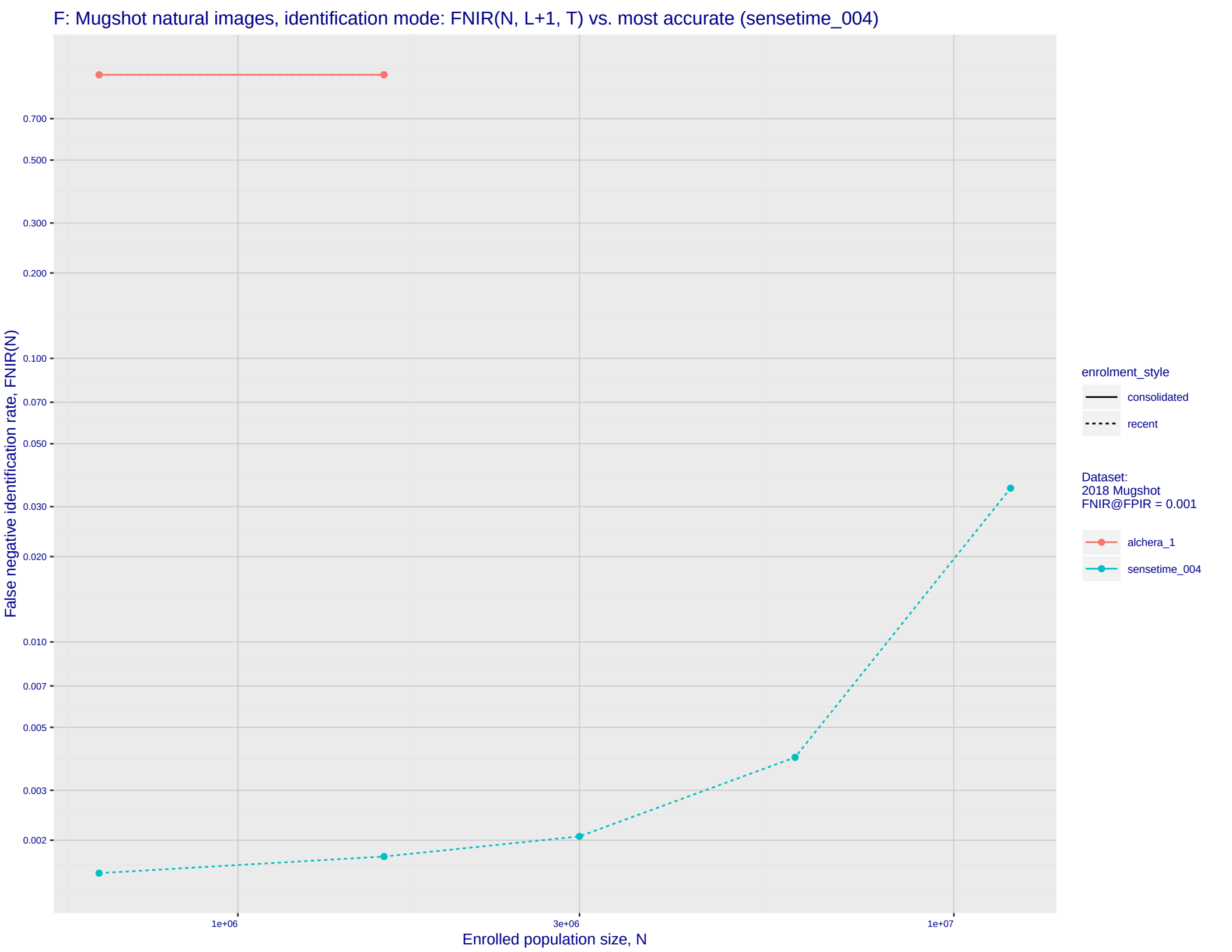



C: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
Selectivity, SEL(T)
7e+01
5e+01
3e+01
2e+01
1e+01
7e+00
5e+00
3e+00
2e+00
1e+00
7e−01
5e−01
3e−01
2e−01
1e−01
7e−02
5e−02
3e−02
2e−02
1e−02
7e−03
5e−03
3e−03
2e−03
1e−03
7e−04
5e−04
3e−04
2e−04
1e−04
7e−05
5e−05
3e−05
2e−05
1e−05
1e−05
3e−05
1e−04
3e−04
1e−03
3e−03
1e−02
3e−02
1e−01
3e−01
False Positive Idenification Rate, FPIR(T)
Enrolled images:
recent
N = 1600000
Mugshot
natural
Mugshot
webcam


D: FPIR dependence on T by probe type for N = 1600000 subjects
False Positive Idenification Rate, FPIR(T)
5e−01
3e−01
1e−01
5e−02
3e−02
1e−02
5e−03
3e−03
1e−03
5e−04
3e−04
1e−04
5e−05
3e−05
1e−05
130
135
140
145
Threshold
Enrolled image:
recent
N = 1600000
Mugshot
natural
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)
False negative identification rate, FNIR(N)
0.700
0.500
0.300
0.200
0.100
0.070
0.050
0.030
0.020
0.010
0.007
0.005
0.003
0.002
1e+06
3e+06
1e+07
Enrolled population size, N
enrolment_style
consolidated
recent
Dataset:
2018 Mugshot
FNIR@FPIR = 0.001
alchera_1
sensetime_004

G: Datasheet

Algorithm: alchera_1

Developer: Alchera Inc

Submission Date: 2018_06_30

Template size: 2048 bytes

Template time (2.5 percentile): 62 msec

Template time (median): 66 msec

Template time (97.5 percentile): 77 msec

Frontal mugshot investigation rank 251 −− FNIR(1600000, 0, 1) = 0.9869 vs. lowest 0.0010 from sensetime_004

natural investigation rank 213 −− FNIR(1600000, 0, 1) = 1.0000 vs. lowest 0.0067 from sensetime_003

natural investigation rank 100 −− FNIR(1600000, 0, 1) = 0.9998 vs. lowest 0.0014 from visionlabs_009

natural investigation rank 102 −− FNIR(1600000, 0, 1) = 1.0000 vs. lowest 0.0694 from cib_000

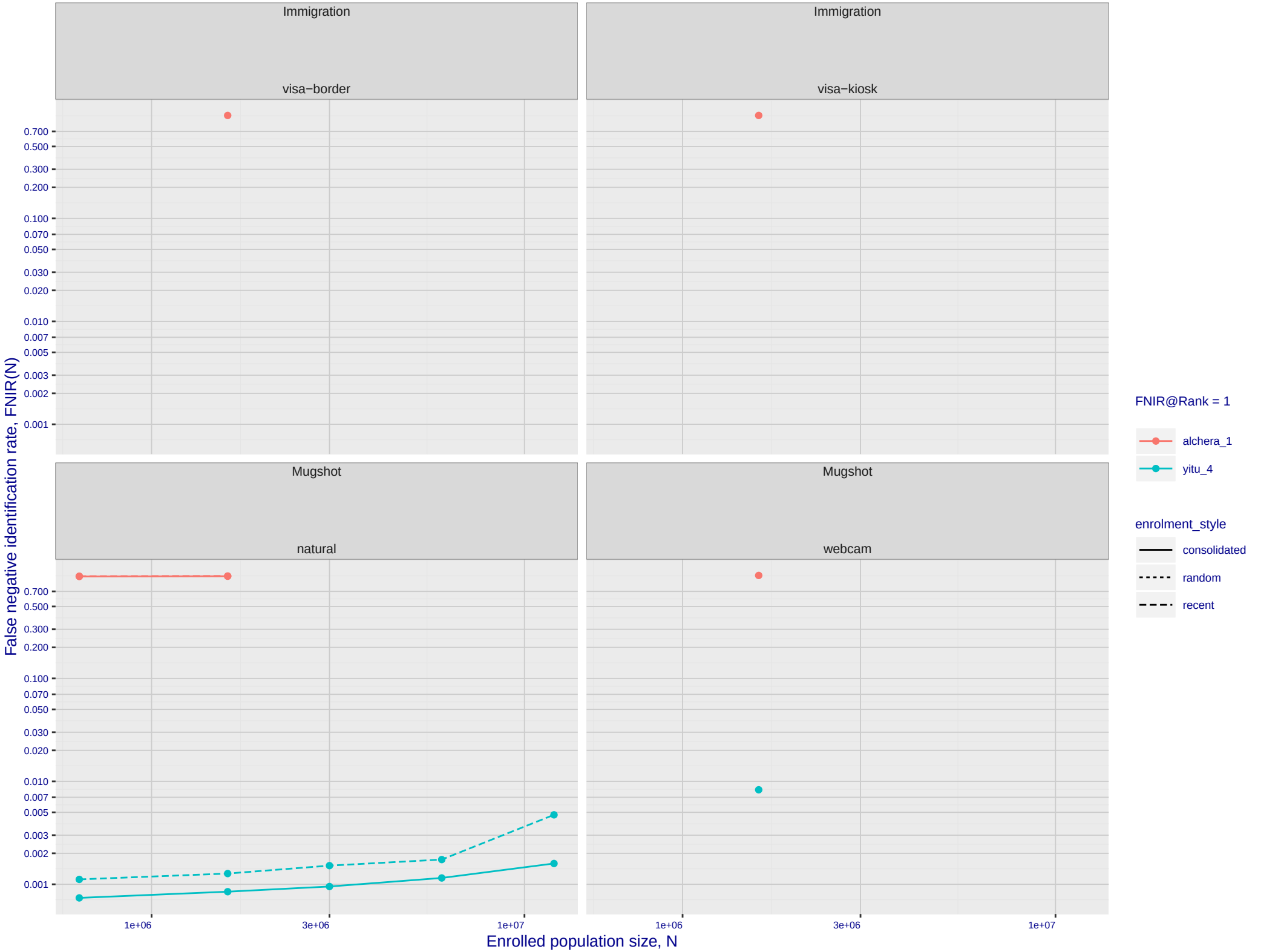
Frontal mugshot identification rank 249 −− FNIR(1600000, T, L+1) = 0.9994 vs. lowest 0.0018 from sensetime_004

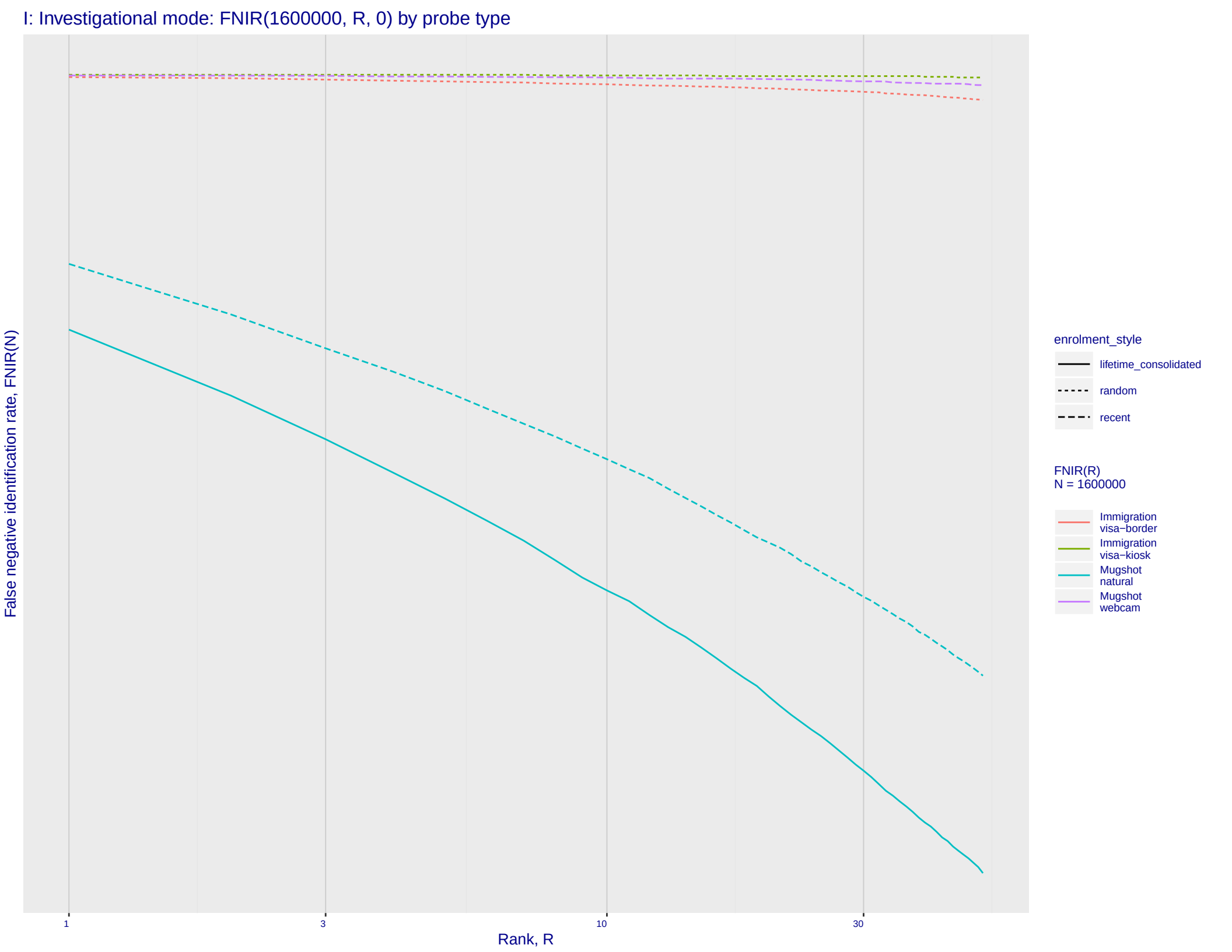
natural identification rank 210 −− FNIR(1600000, T, L+1) = 1.0000 vs. lowest 0.0122 from sensetime_003

natural identification rank 99 −− FNIR(1600000, T, L+1) = 1.0000 vs. lowest 0.0059 from sensetime_004

natural identification rank 95 −− FNIR(1600000, T, L+1) = 1.0000 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
False negative identification rate, FNIR(N)
1
3
10
30
Rank, R
enrolment_style
lifetime_consolidated
random
recent
FNIR(R)
N = 1600000
Immigration visa−border
Immigration visa−kiosk
Mugshot natural
Mugshot webcam

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