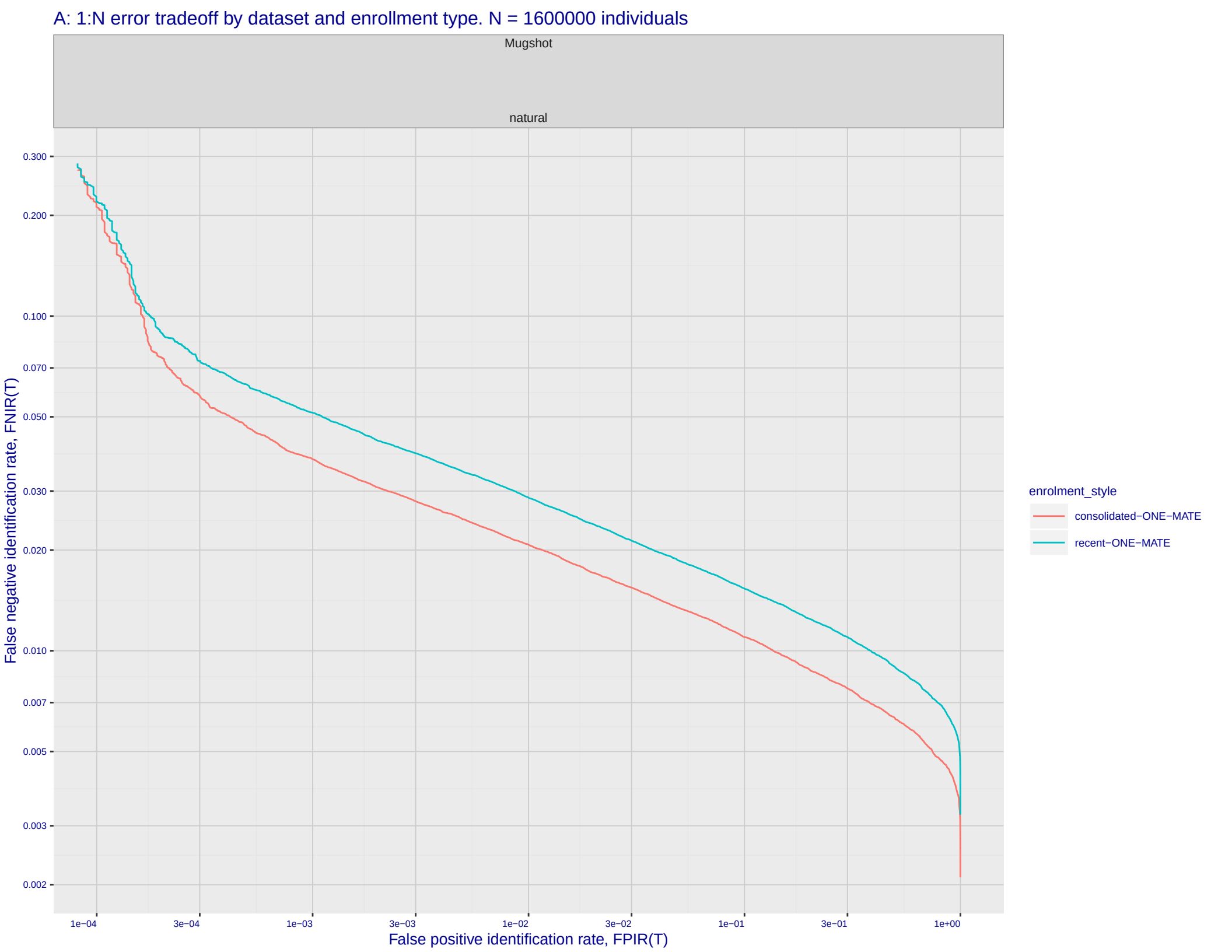
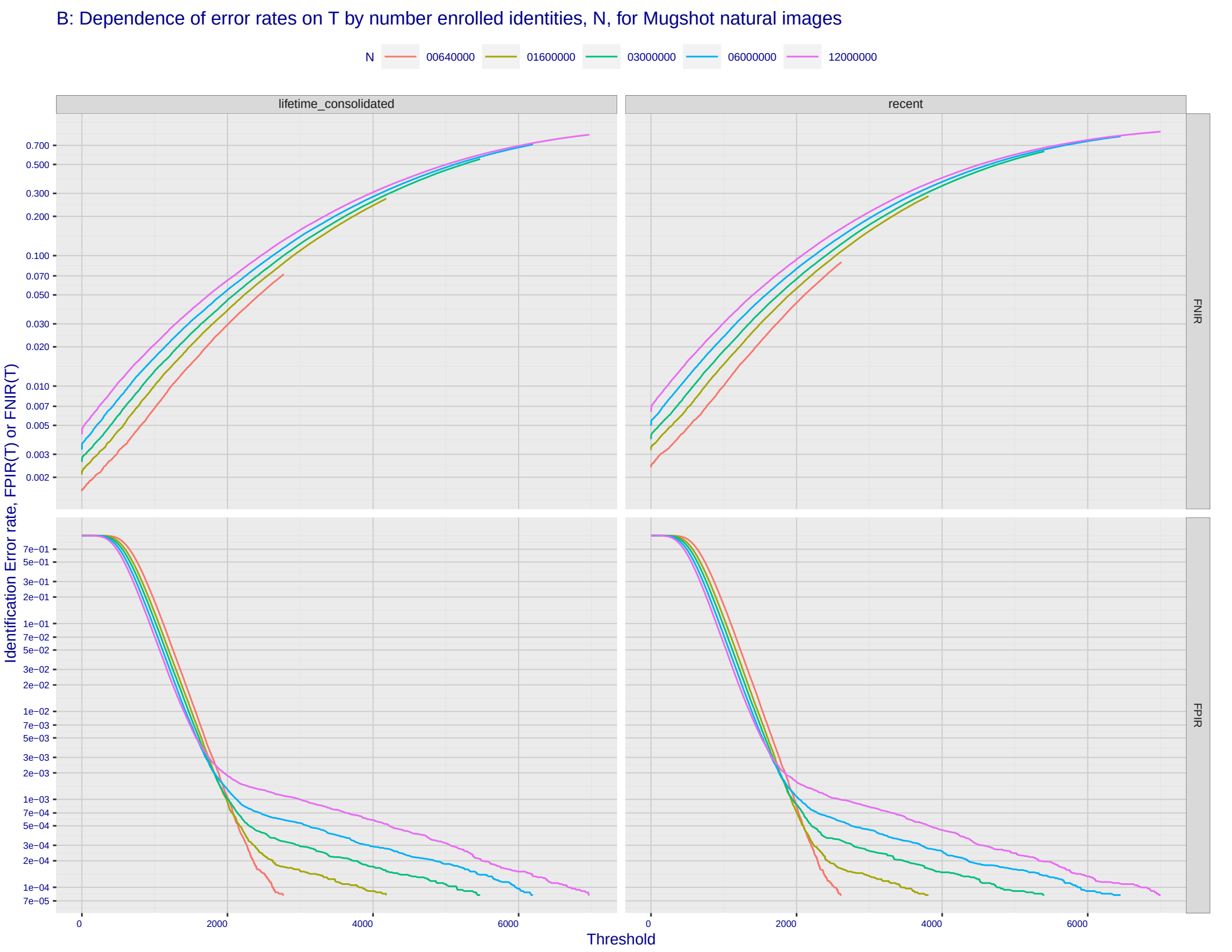
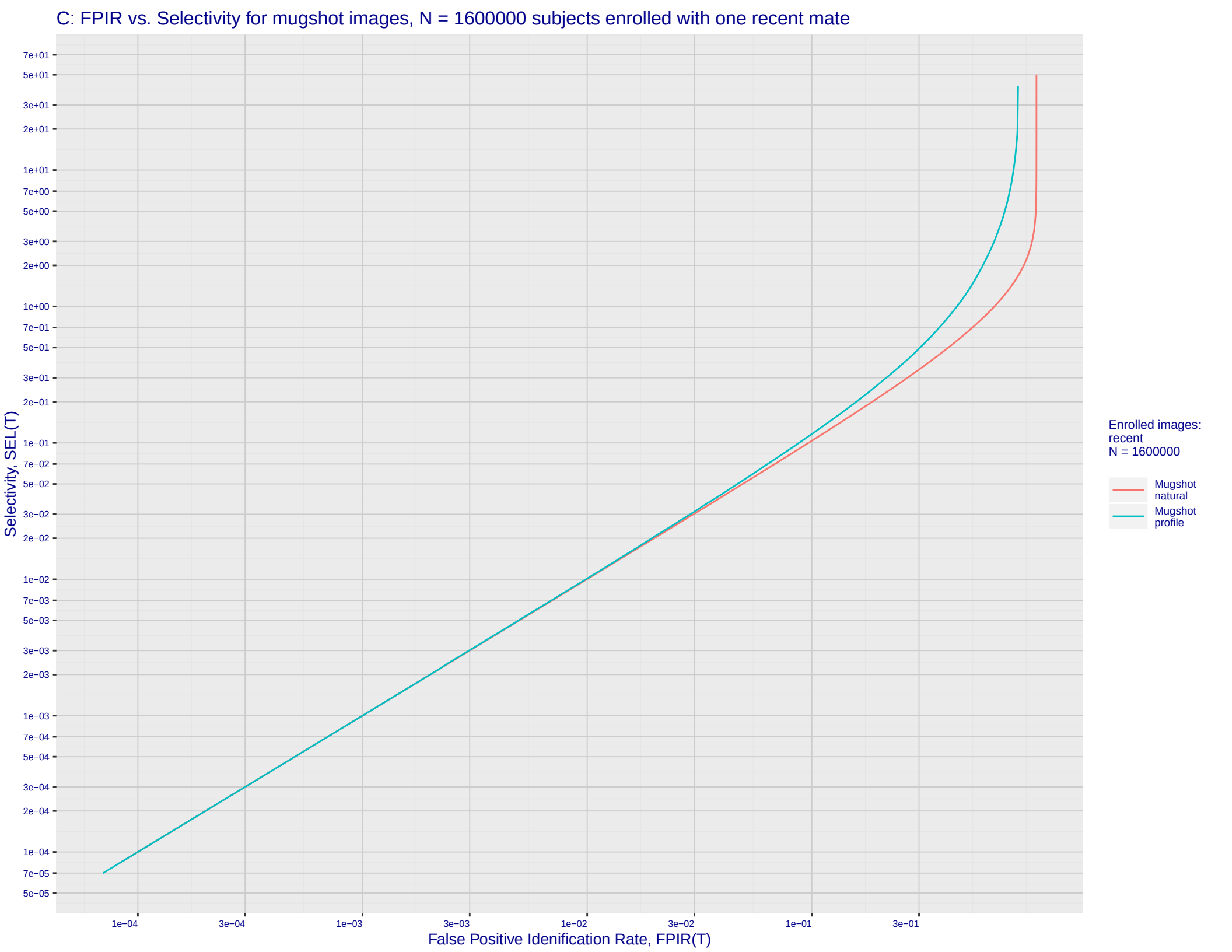
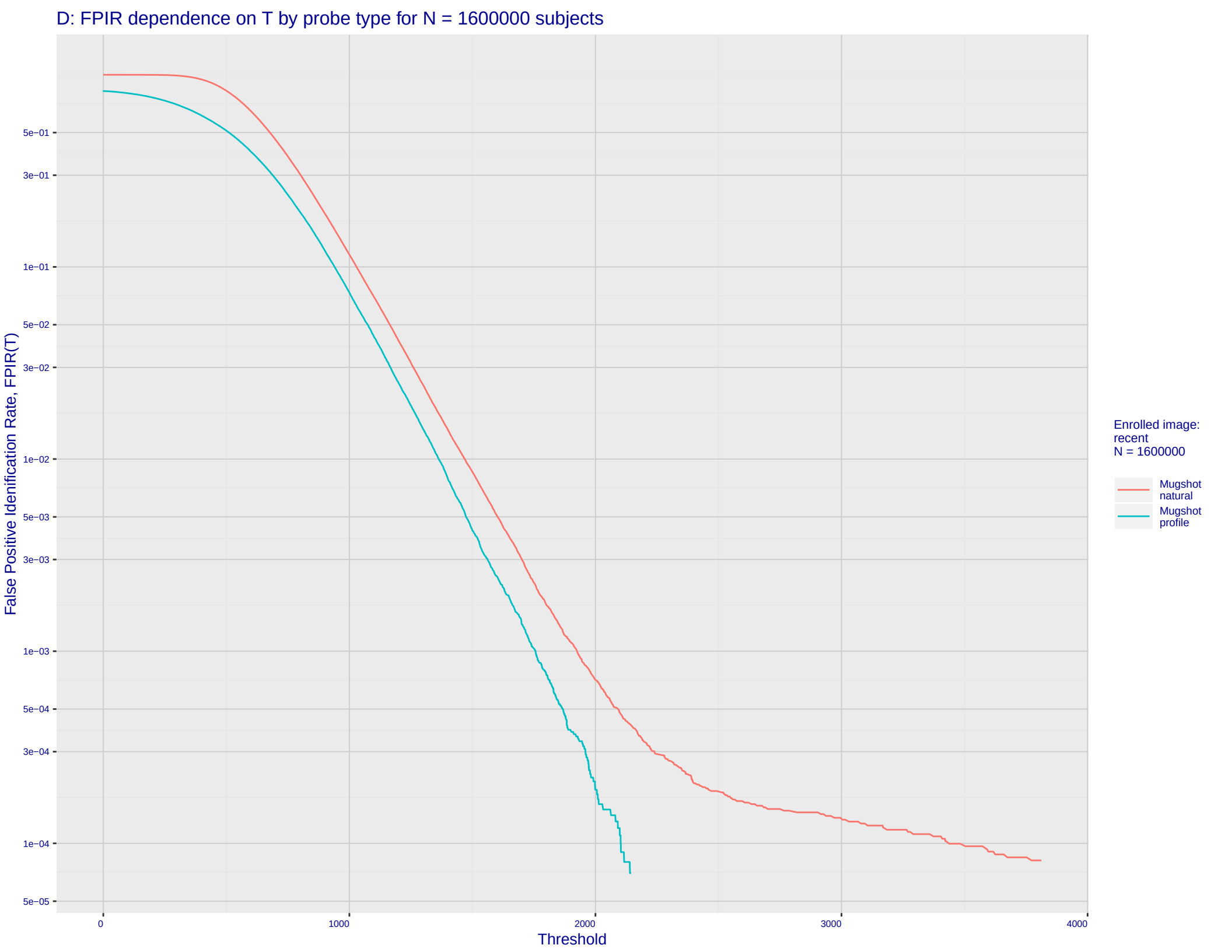
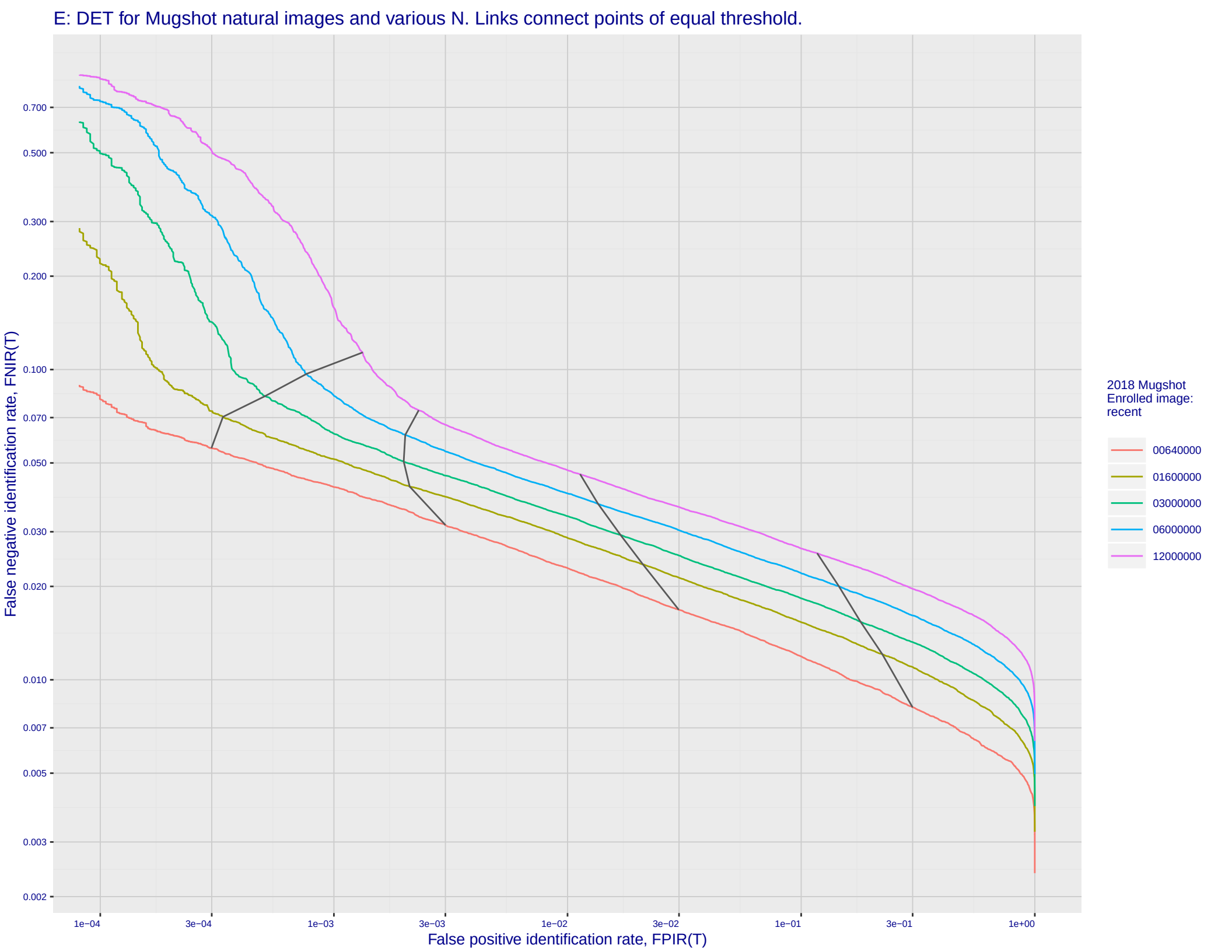
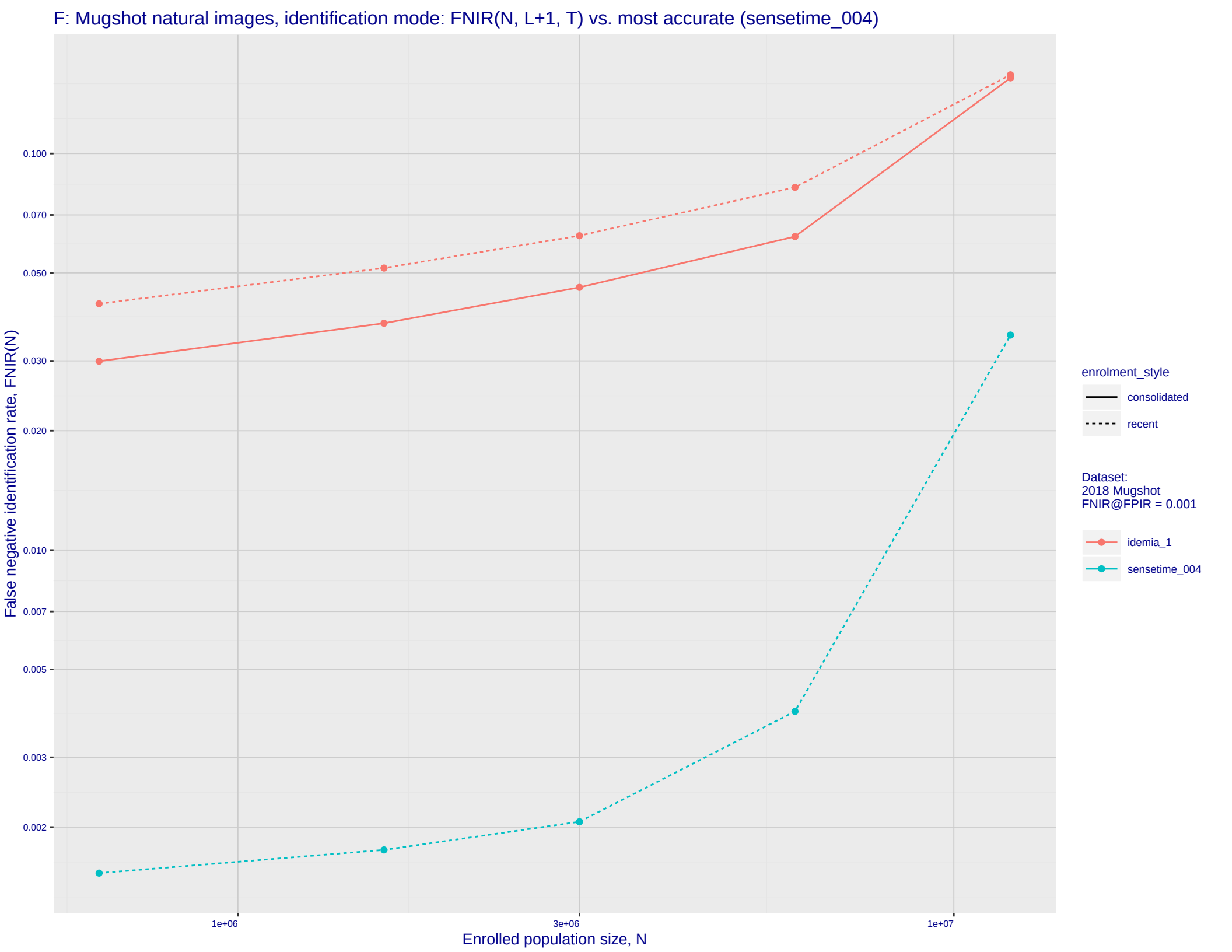

A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
Mugshot
natural
False negative identification rate, FNIR(T)
0.300
0.200
0.100
0.070
0.050
0.030
0.020
0.010
0.007
0.005
0.003
0.002
1e−04
3e−04
1e−03
3e−03
1e−02
3e−02
1e−01
3e−01
1e+00
False positive identification rate, FPIR(T)
enrolment_style
consolidated−ONE−MATE
recent−ONE−MATE


B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
N
00640000
01600000
03000000
06000000
12000000
lifetime_consolidated
recent
FNIR
FPIR
Identification Error rate, FPIR(T) or FNIR(T)
Threshold
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
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
0
2000
4000
6000


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
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
profile


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
0
1000
2000
3000
4000
Threshold
Enrolled image:
recent
N = 1600000
Mugshot
natural
Mugshot
profile


E: DET for Mugshot natural images and various N. Links connect points of equal threshold.
False negative identification rate, FNIR(T)
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−04
3e−04
1e−03
3e−03
1e−02
3e−02
1e−01
3e−01
1e+00
False positive identification rate, FPIR(T)
2018 Mugshot
Enrolled image:
recent
00640000
01600000
03000000
06000000
12000000


F: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
False negative identification rate, FNIR(N)
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
idemia_1
sensetime_004

G: Datasheet

Algorithm: idemia_1

Developer: Idemia

Submission Date: 2018_02_16

Template size: 364 bytes

Template time (2.5 percentile): 405 msec

Template time (median): 415 msec

Template time (97.5 percentile): 433 msec

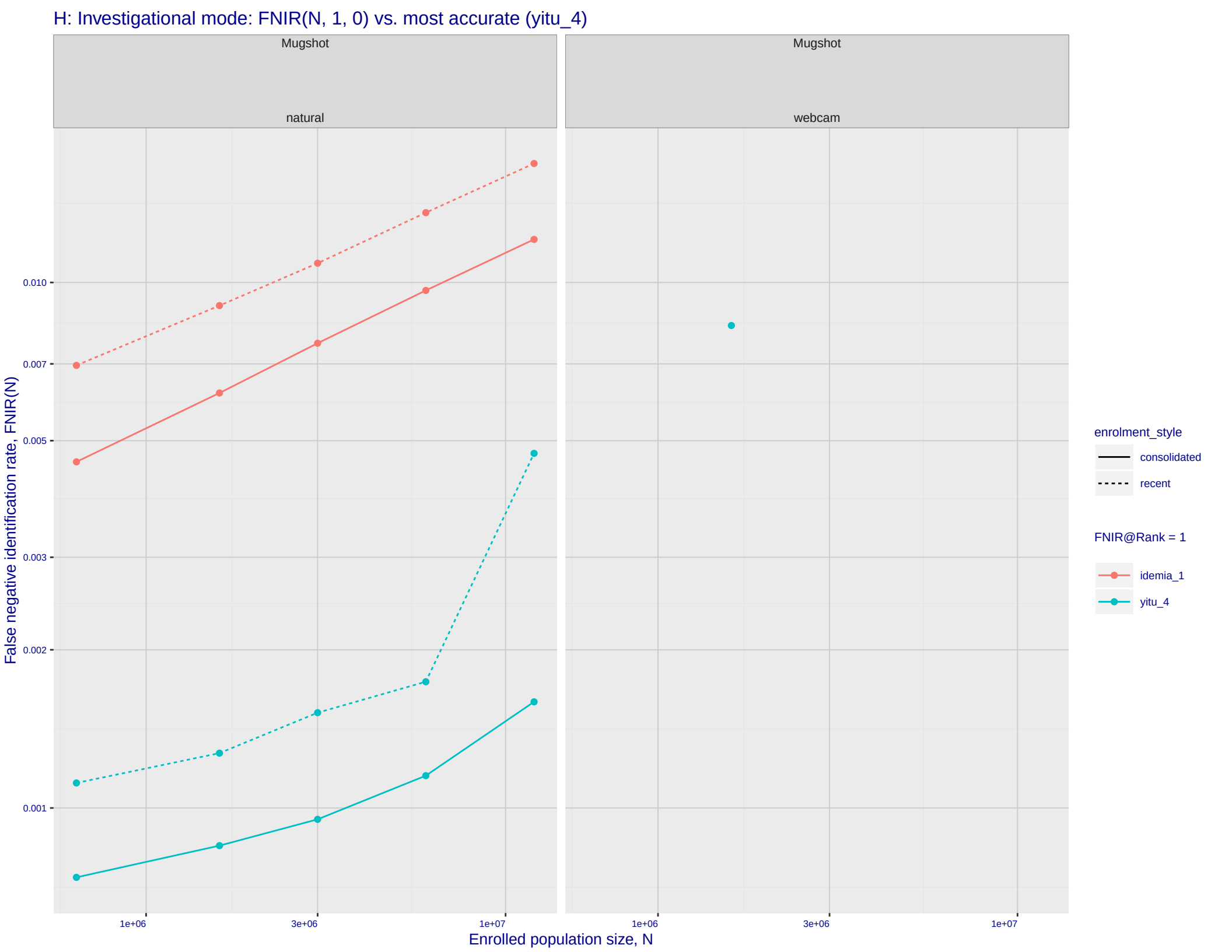
Frontal mugshot investigation rank 106 −− FNIR(1600000, 0, 1) = 0.0090 vs. lowest 0.0010 from sensetime_004

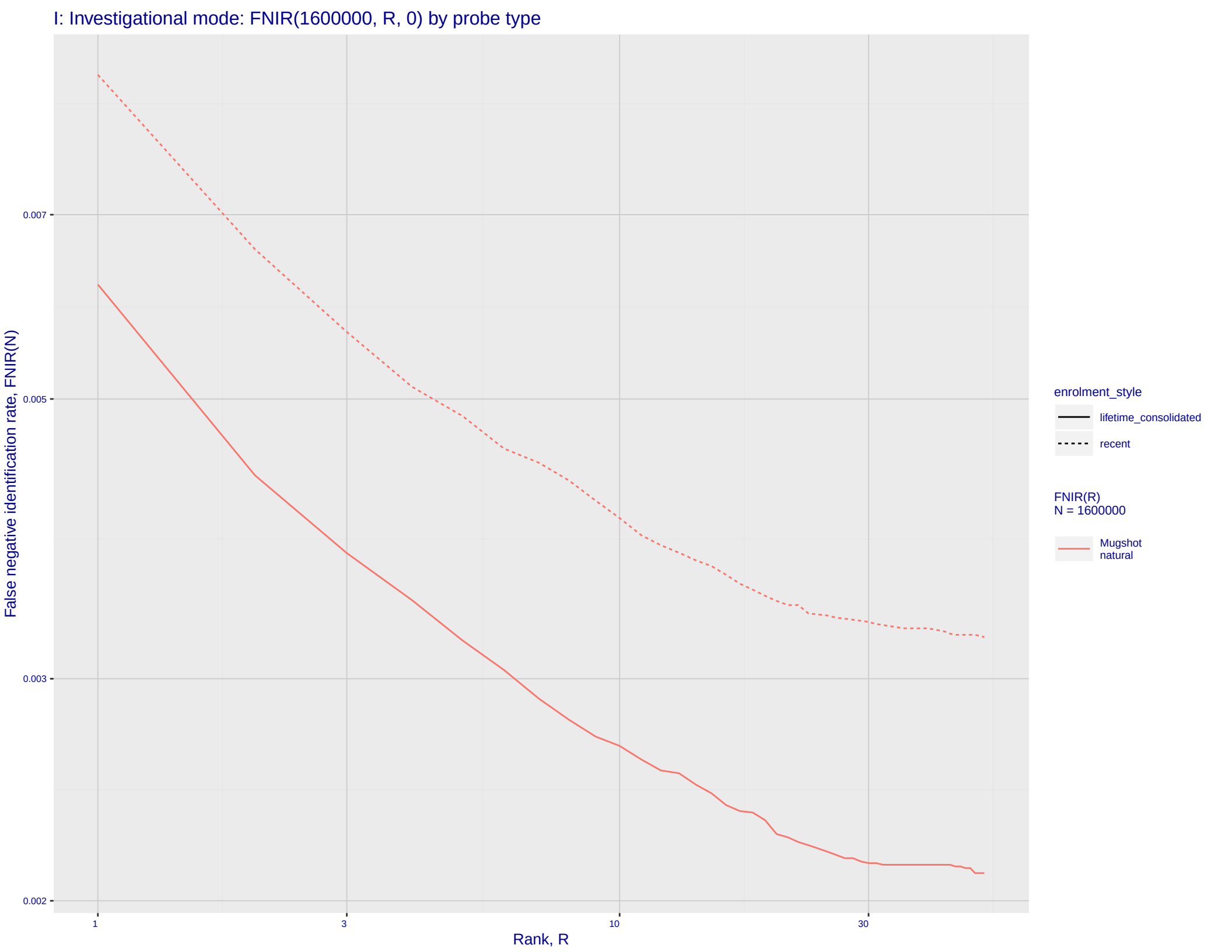
natural investigation rank 230 −− FNIR(1600000, 0, 1) = 0.9118 vs. lowest 0.0492 from paravision_005

natural investigation rank 230 −− FNIR(1600000, 0, 1) = 0.9118 vs. lowest 0.0492 from paravision_005

Frontal mugshot identification rank 72 −− FNIR(1600000, T, L+1) = 0.0514 vs. lowest 0.0018 from sensetime_004

natural identification rank 50 −− FNIR(1600000, T, L+1) = 0.9561 vs. lowest 0.1020 from sensetime_004


H: Investigational mode: FNIR(N, 1, 0) vs. most accurate (yitu_4)
Mugshot
natural
Mugshot
webcam
False negative identification rate, FNIR(N)
0.010
0.007
0.005
0.003
0.002
0.001
1e+06
3e+06
1e+07
1e+06
3e+06
1e+07
Enrolled population size, N
enrolment_style
consolidated
recent
FNIR@Rank = 1
idemia_1
yitu_4


I: Investigational mode: FNIR(1600000, R, 0) by probe type
False negative identification rate, FNIR(N)
0.007
0.005
0.003
0.002
1
3
10
30
Rank, R
enrolment_style
lifetime_consolidated
recent
FNIR(R)
N = 1600000
Mugshot
natural

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