Exclude and Restrict to UMLS Semantic Types

Exclude Semantic Types
If certain UMLS Semantic Types (SemTypes) are not useful for your research or produce undesirable results, MetaMap will ignore those SemTypes if called with the `--exclude_sts` or `-k` command-line option. E.g., to exclude Drug Delivery Devices, Medical Devices, and Research Devices, call MetaMap with

```
-k drdd,medd,read
```

Restrict to Semantic Types
Conversely, if your research is focused exclusively on certain SemTypes, MetaMap will restrict its results to those SemTypes if called with the `--restrict_to_sts` or `-J` command-line option. E.g., to restrict results to concepts in the Disease or Syndrome and Injury or Poisoning SemTypes, call MetaMap with

```
-J dsyn,inpo
```

The names of the SemTypes called with `-k` and `-J` are all lowercase.

More information about UMLS Semantic Types is available here.

Here are two examples of using `--exclude_sts` to reduce spurious ambiguity and/or limit false positives:

1. Ambiguous strings of SemType Gene or Genome (`gngm`): Many strings of the `gngm` SemType such as those below are ambiguous because they also denote UMLS concepts that are not primarily genetic. Excluding the `gngm` SemType may be useful to some researchers.

```
AIM  ARM  ART  BAR  CAMEL  CAR  CELL  CHAD  CLAMP  CLOCK  COIL
CRAMP  DREAM  DUET  FAN  FAT  FIAT  FIST  FLAP  FLOWER  GAS  GILT
GRASP  GRID  GRIT  HANG  HASH  HIP  HOP  HUB  HUGO  IMPACT ITCH
JAM  JET  KID  KIR  LAMA  LAP  LARD  LIP  LOTUS  MAIL  MASK
MELT  MICA  MINERVA  MINT  MIST  MOLT  NAIL  NET  NODAL  NUMB  PAD
Palm  PARIS  PHI  PINCH  PION  PIP  PIT  POLE  PRUNE  PRY  RAGE
RAMP  SHARP  SHOT  SLUG  SOUL  SPA  SPICE  SPOT  STING  TACTILE  TAUT
TESMIN  TIP  TOPORS  TRAM  TRAP  TRUSS  TUB  TUNA  VERGE  WAVE  iCE
```

2. Strings of SemType Finding (`fndg`): We have found the `fndg` SemType to be especially noisy because many strings of that SemType, in particular numerical strings such as those below, are of dubious usefulness. Excluding the `fndg` SemType may be useful to some researchers.

```
0  0\%  0.15  0.3  0.45  0.6  0.75  0.9  1
1 - 3  1\+  1-10  1-2  1-24\%  1.05  1.2  1.35  1.5
1.65  1.8  1.95  1/24  1/36  1/60  10\%  10-14  11-12
11-16  13-14  15  15-19  15-21  16  17-24  19-26  2
2+  2.25  2.5  20\%  20-24  20-25  29+  3  3  4
3  6  3\+  3-4  3.5  3/12  3/18  3/24  3/36  3/4
3/6  3/60  3/9  30\%  4  4\+  4.5  400  4000
425  450  5  5  5  5  5-6  5-9  5.5  50\%  500
550  575  6  9  6\+11  6.5  6/12  6/18  6/24  6/3
600  6000  65\+  650  7-8  70\%  75\%  80\%  800
8000  850  9-10  9-18  90\%  <50  +  ++  +++
```

Suppressing mostly numerical concepts such as those shown above can also be accomplished using this option of MetaMap2016V2.