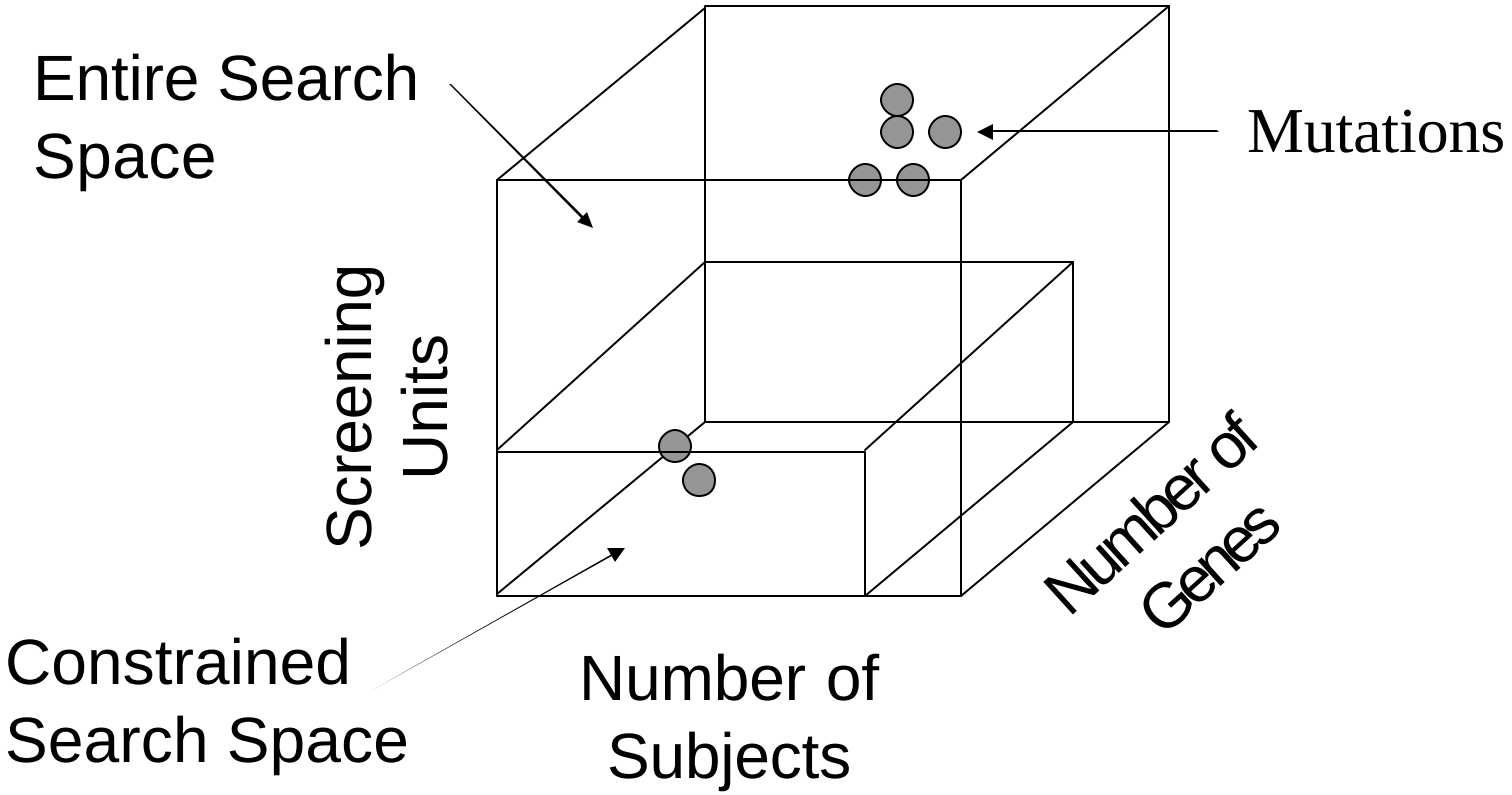
TrAPSS

Transcript Annotation Prioritizatio

Dr. Terry Braun

Background

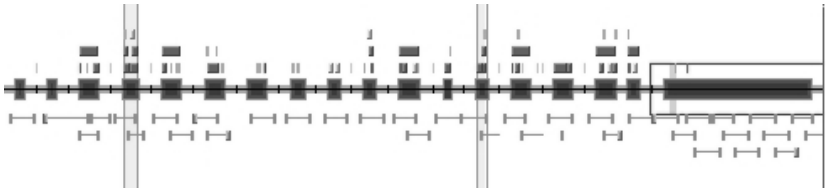


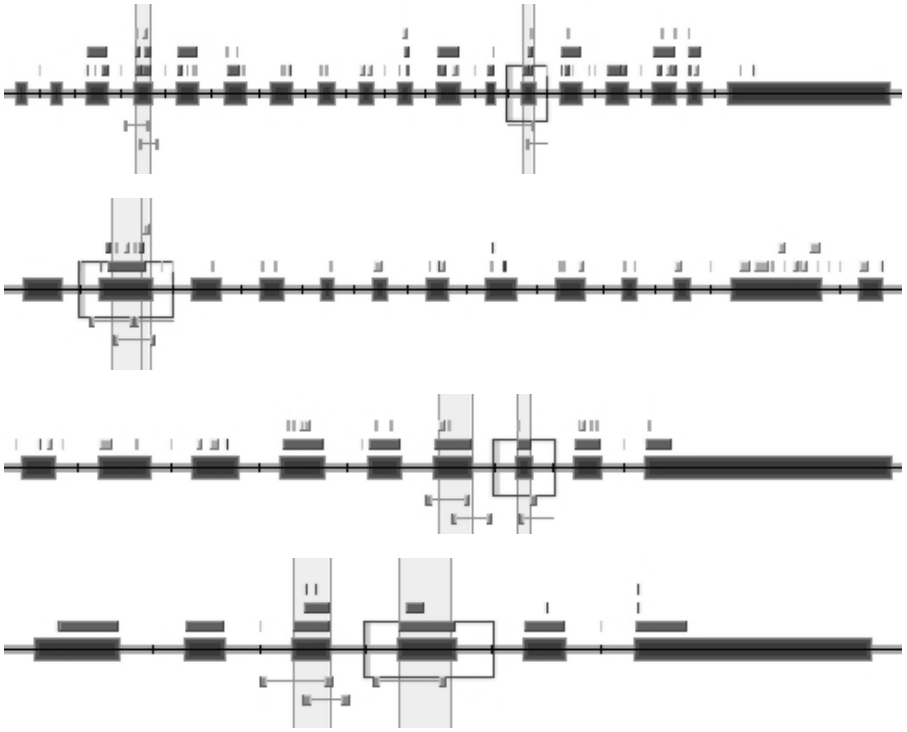
Modest Search Space Example

100 genes * 100 Subjects * 20 primer pairs = 200,000 assays

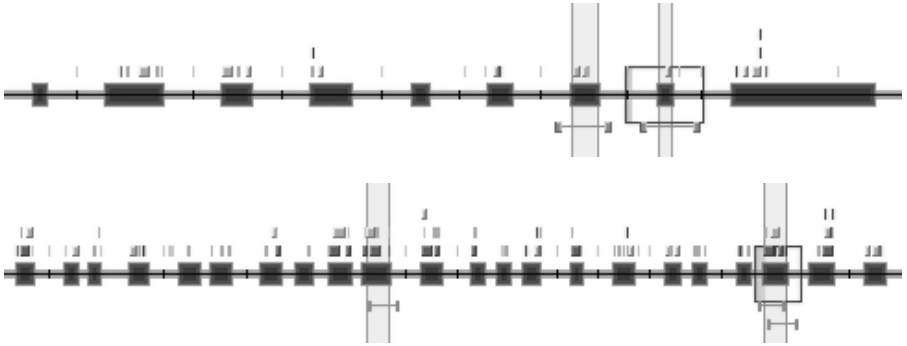
Background

38 primer pairs – 1 gene

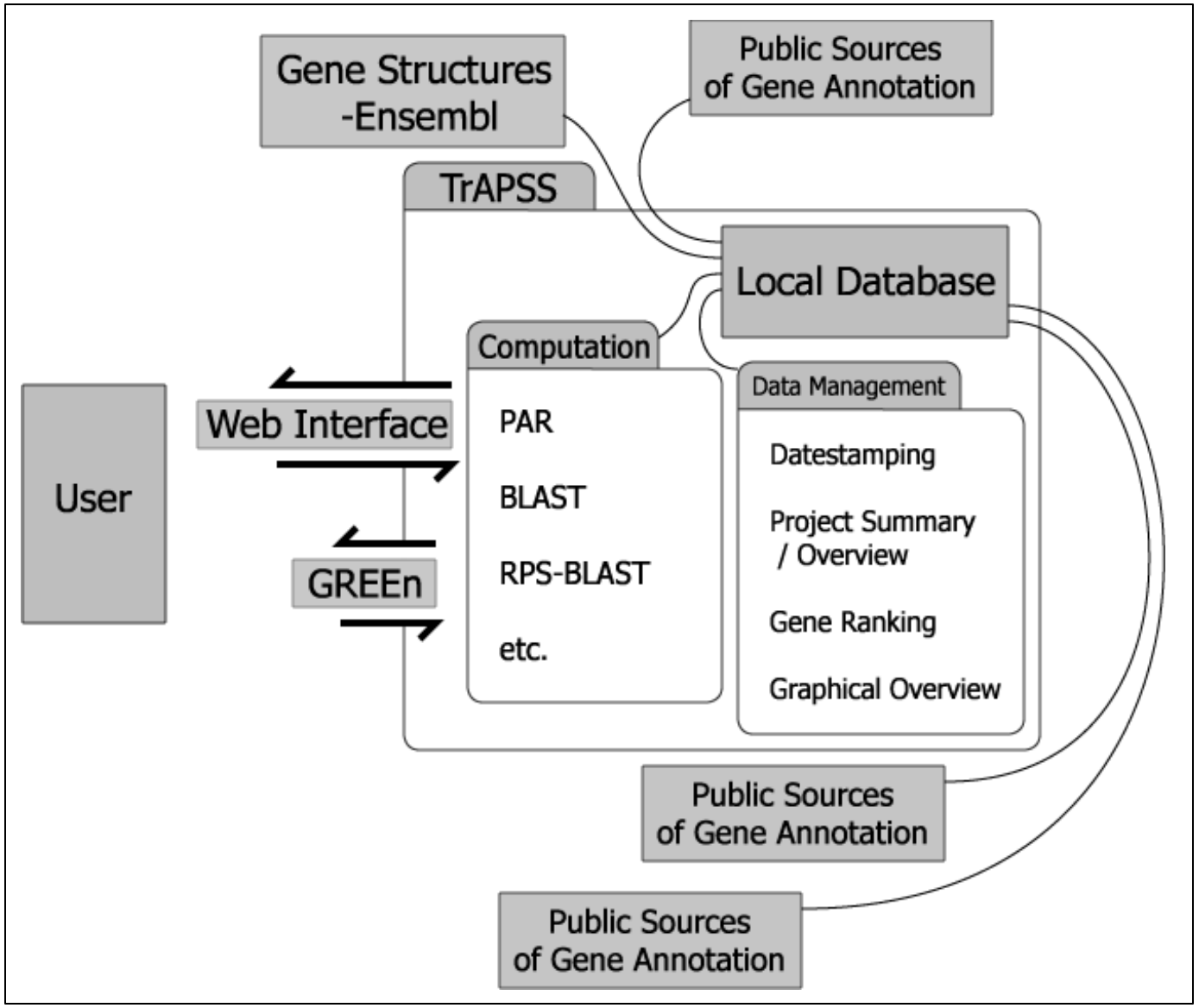




18 primer pairs – 6 genes



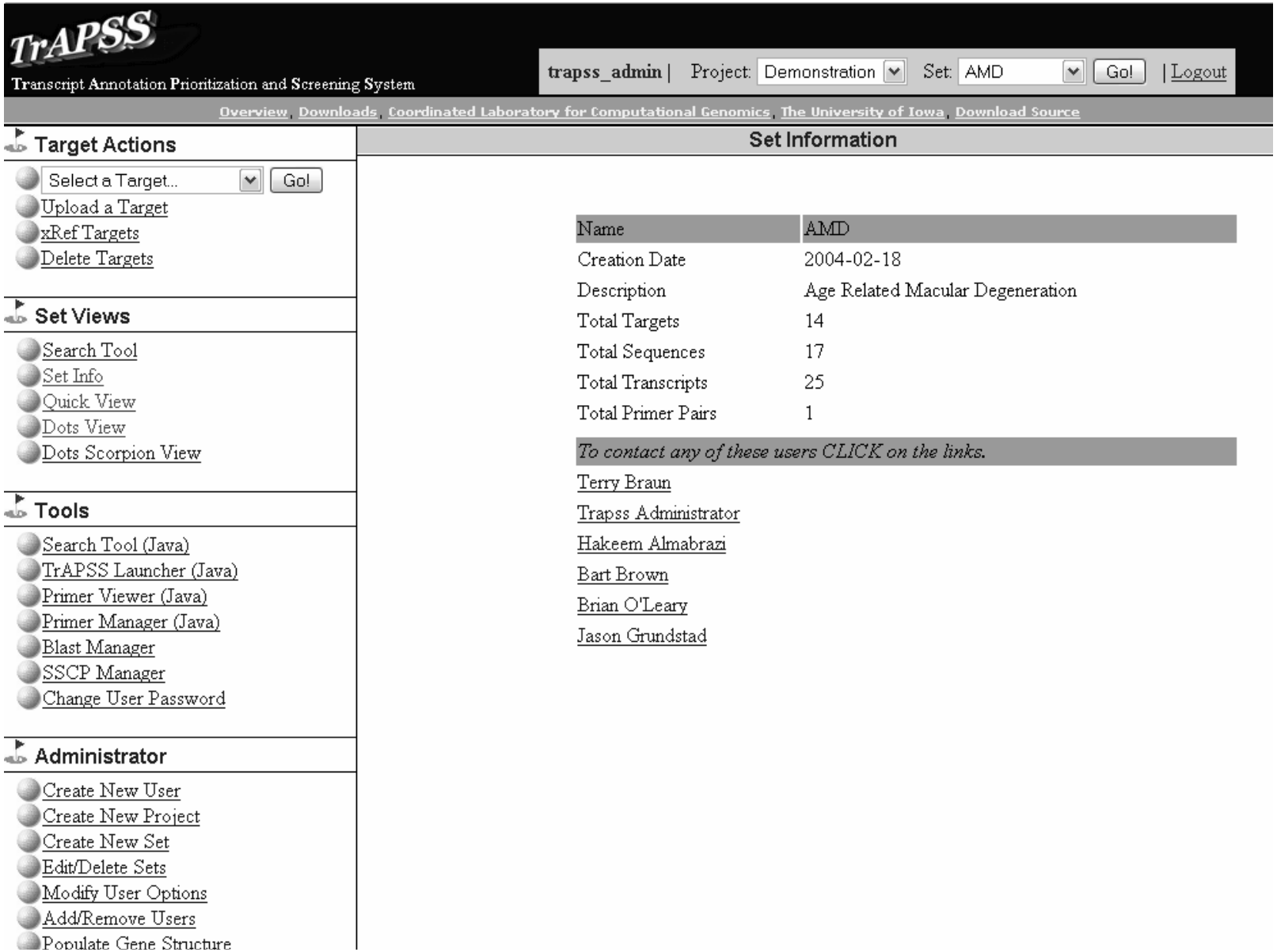
TrAPSS System



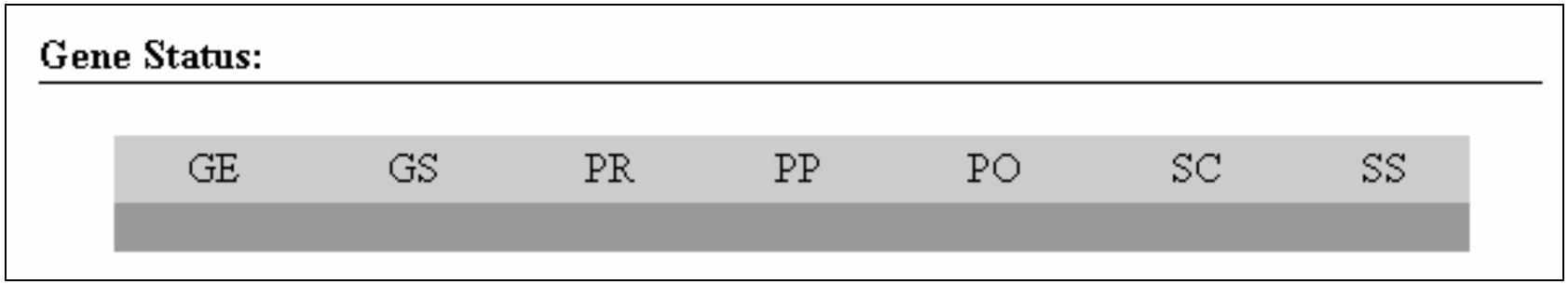
Secure Login

Copyright 2004 © The University of Iowa. All rights reserved.

Project/Set Selection



Tracking Progress – Dots



GE → Genomic Evidence

GS → Genomic Structure

PR → Prioritized Regions

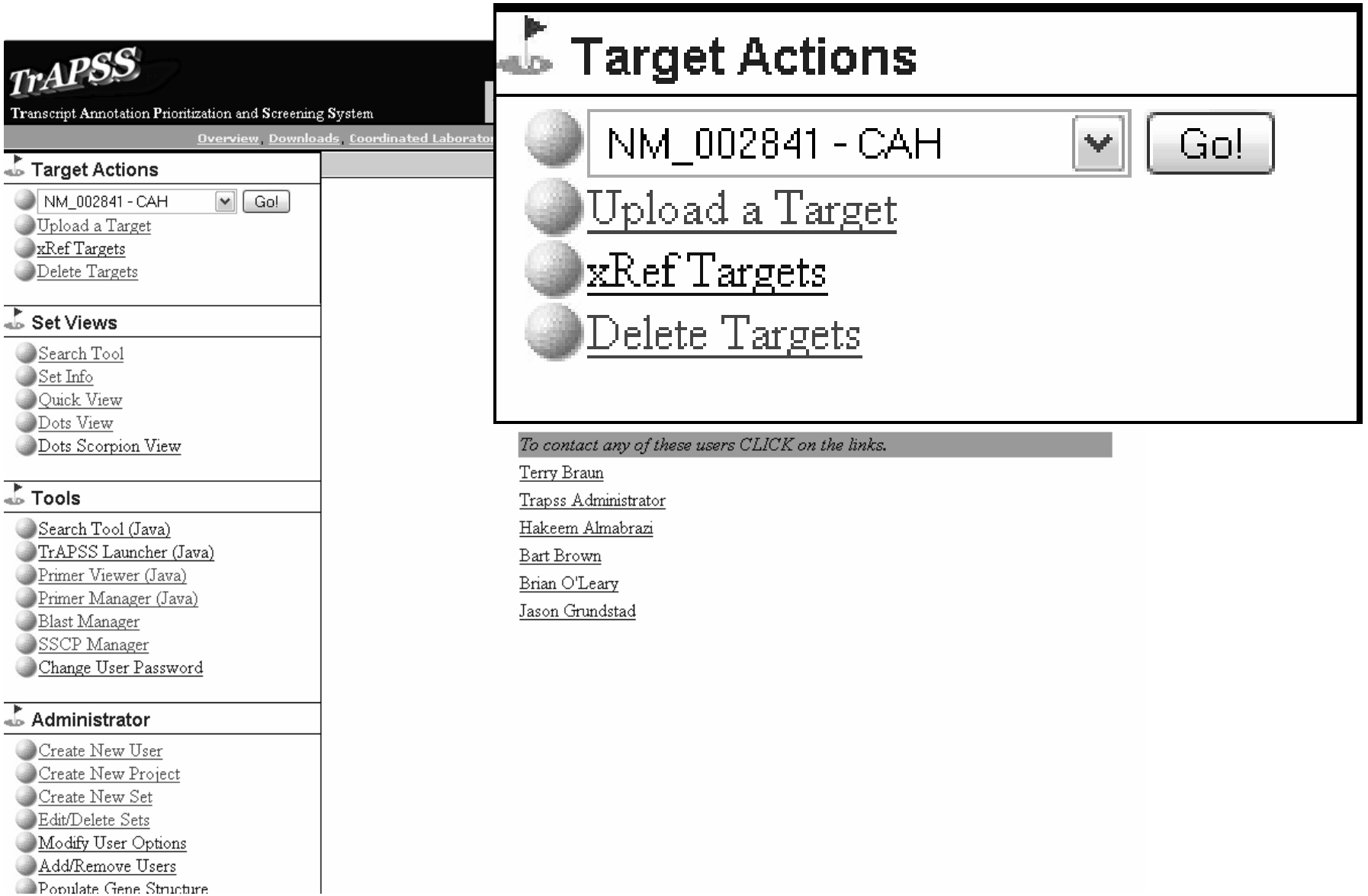
PP → Primers Picked

PO → Primers Ordered

SC → SSCP Results

SS → Sequence Verified Shift

Target Actions



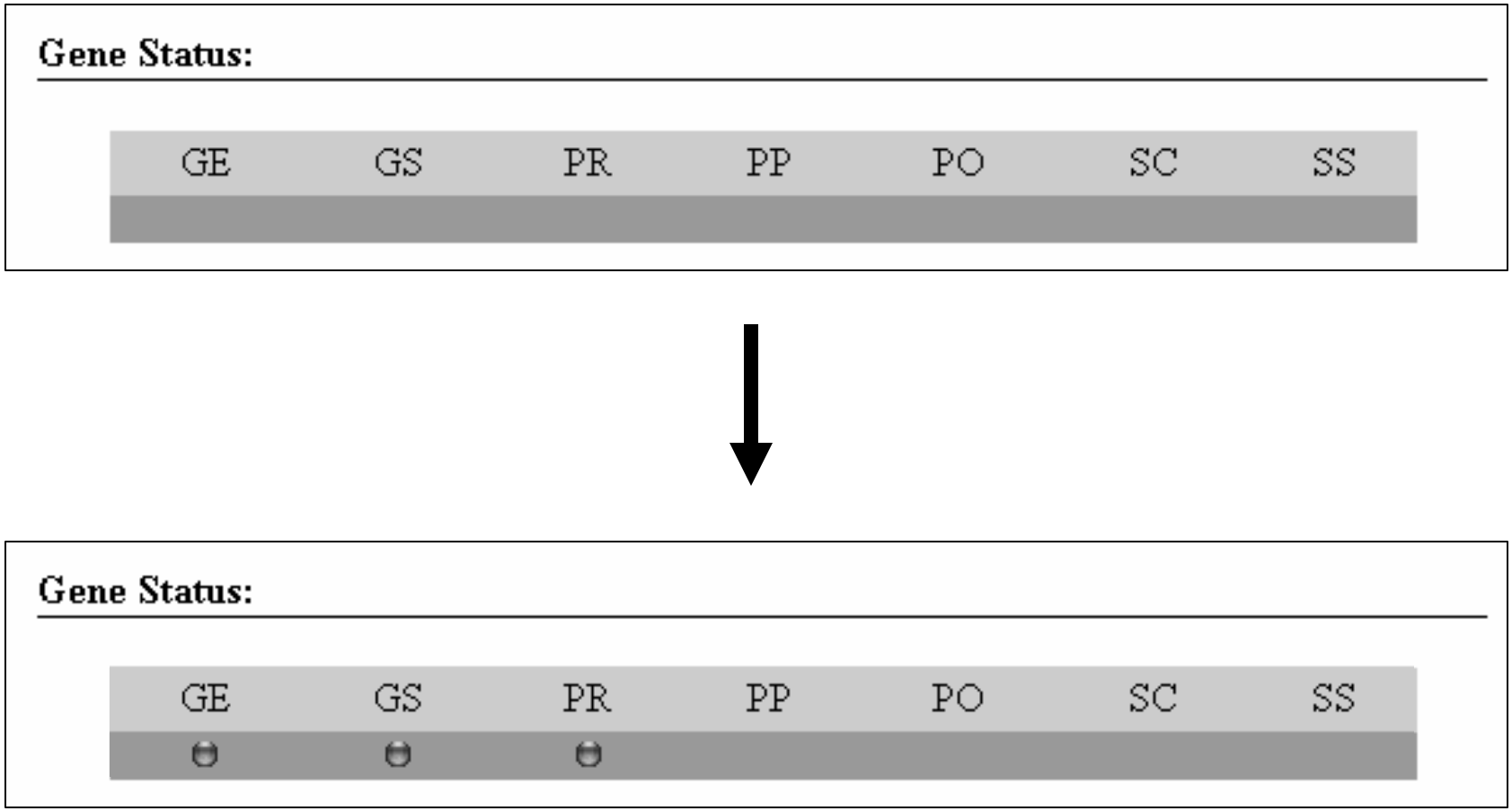
Upload a Target

TrAPSS

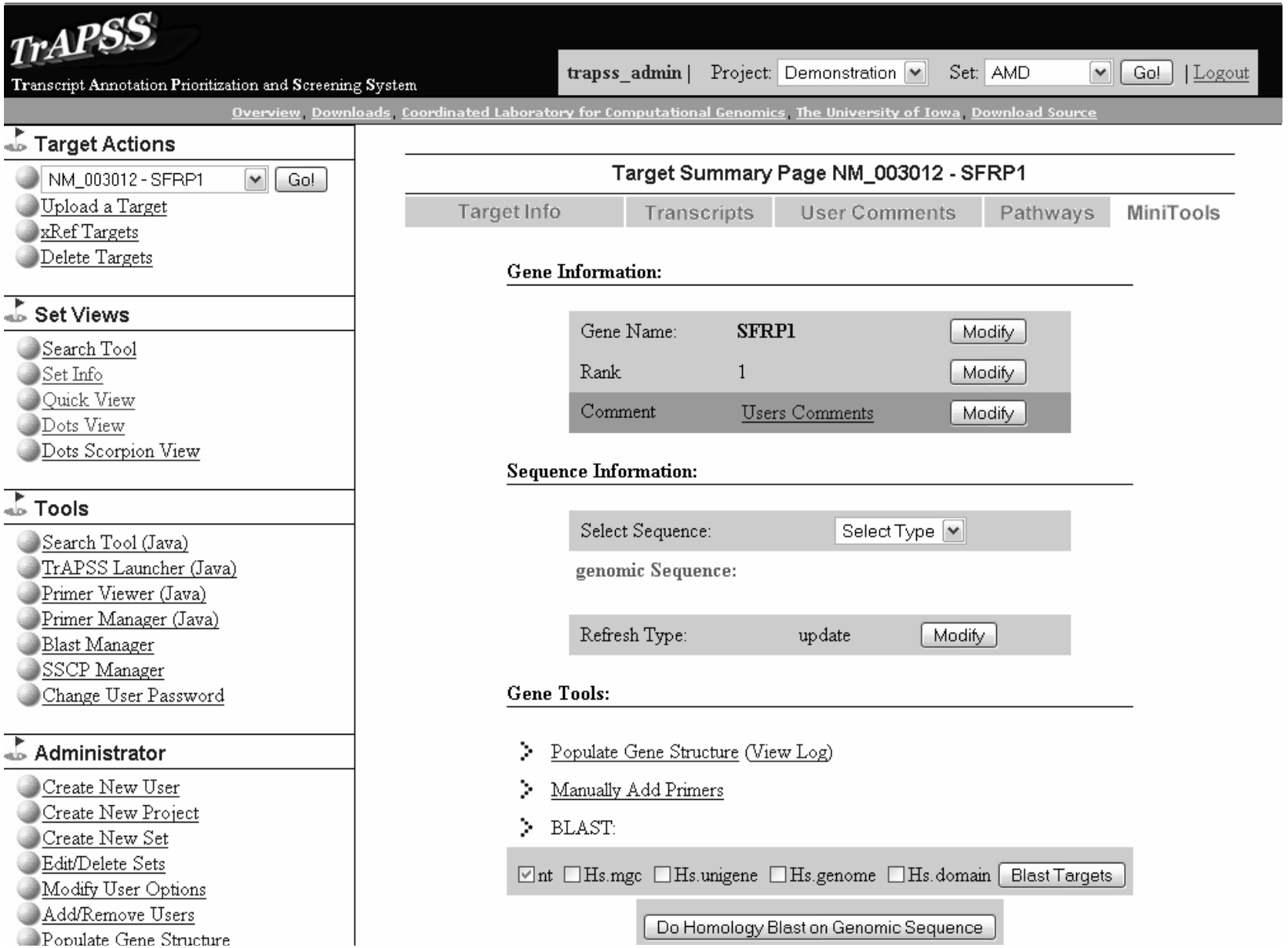
```
Job will start shortly, please refresh this page to see progress.

checking target: 2990

====================================

DATE: Jul 13 2004  2:27PM
current core DB: homo_sapiens_core_22_34d
current SNP DB:  homo_sapiens_snp_22_34d

---------------------------
   target_id: 2990
---------------------------
Located in Ensembl DB.
    /mnt/trapss/bin/perl/populateDB//populateDB.pl --target_id 2990

DATE:  Jul 13 2004  2:27PM

current core DB: homo_sapiens_core_22_34d
current SNP DB:  homo_sapiens_snp_22_34d
    NM_002841  (target_id: 2990)        - Ensembl gene exists (ENSG00000144724) , populating gene structure and annotation:
  Description: Protein-tyrosine phosphatase gamma precursor (EC 3.1.3.48) (R-PTP- gamma). [Source:SWISSPROT;Acc:P23470]
     Inserting data into sequence table . . .
     Inserting transcript 1 of 1 . . .
        Inserting data into transcript table . . .
        Inserting data into exon and intron table . . .
        Calling loadTranscriptFeatures(Transcript, Ensembl_core_db)
        Inserting CDS data into annotation table . . .
        Inserting domain data into annotation table . . .
        Calling  load_SecStruct.pl 5074 . . .
        Using Threshold: 3
        Calling  load_TransMem.pl 5074 . . .
     Updating dots . . .
     Calling loadSequenceFeatures(Sequence, Ensembl_slice)
        Installing SNPs (this may take a few minutes) . . .
          Inserting SNP 1 into annotation table . . .
          Inserting SNP 2 into annotation table . . .
          Inserting SNP 3 into annotation table . . .
```

Populate Gene Structure

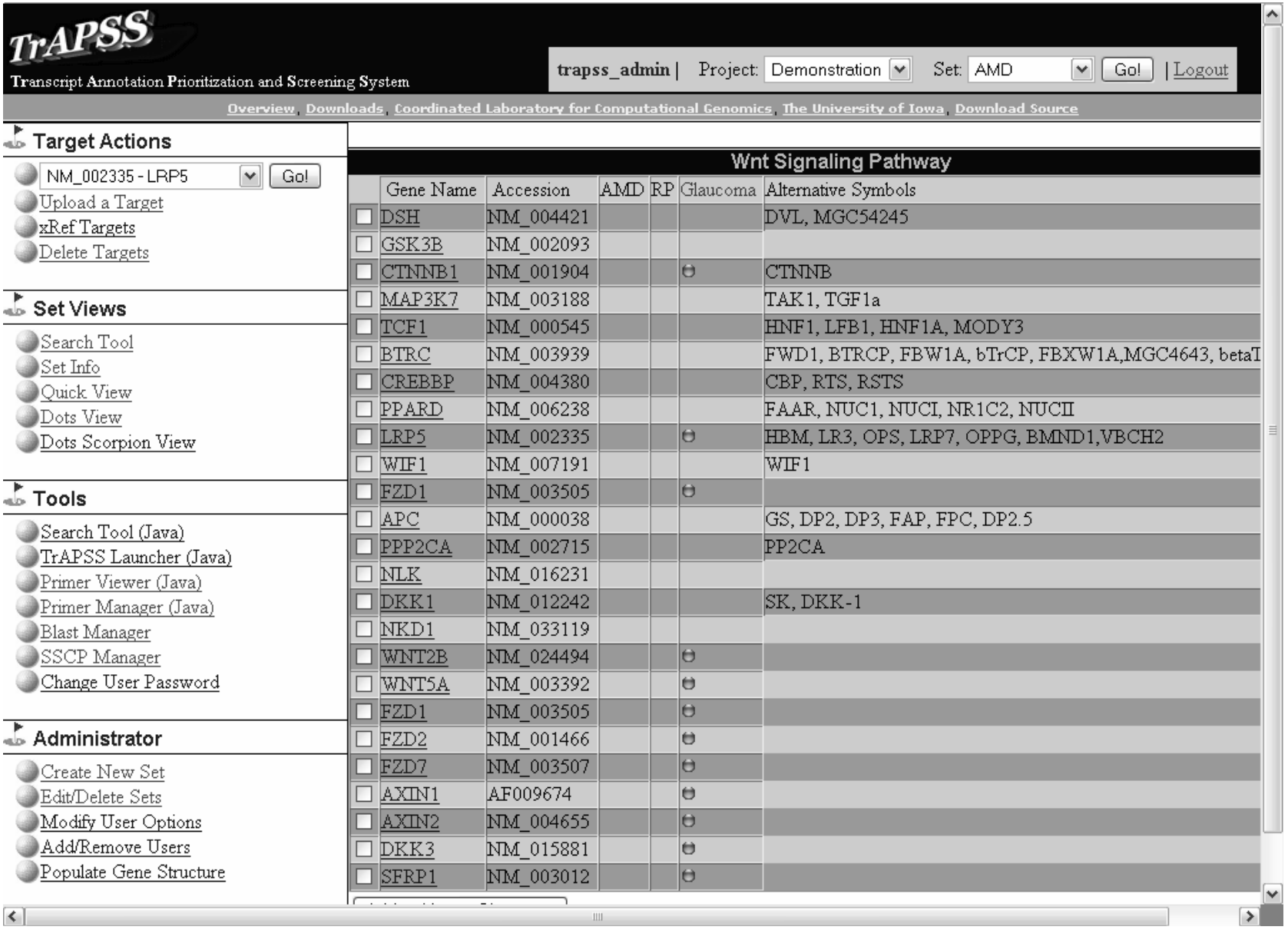
Dots after Loading a Target



Target Summary



Pathway Information



TrAPSS
Transcript Annotation Prioritization and Screening System

trapss_admin | Project: Demonstration Set: AMD Go! | Logout

Overview, Downloads, Coordinated Laboratory for Computational Genomics, The University of Iowa, Download Source

Target Actions

NM_002335 - LRP5 Go!
Upload a Target
xRef Targets
Delete Targets

Set Views

Search Tool
Set Info
Quick View
Dots View
Dots Scorpion View

Tools

Search Tool (Java)
TrAPSS Launcher (Java)
Primer Viewer (Java)
Primer Manager (Java)
Blast Manager
SSCP Manager
Change User Password

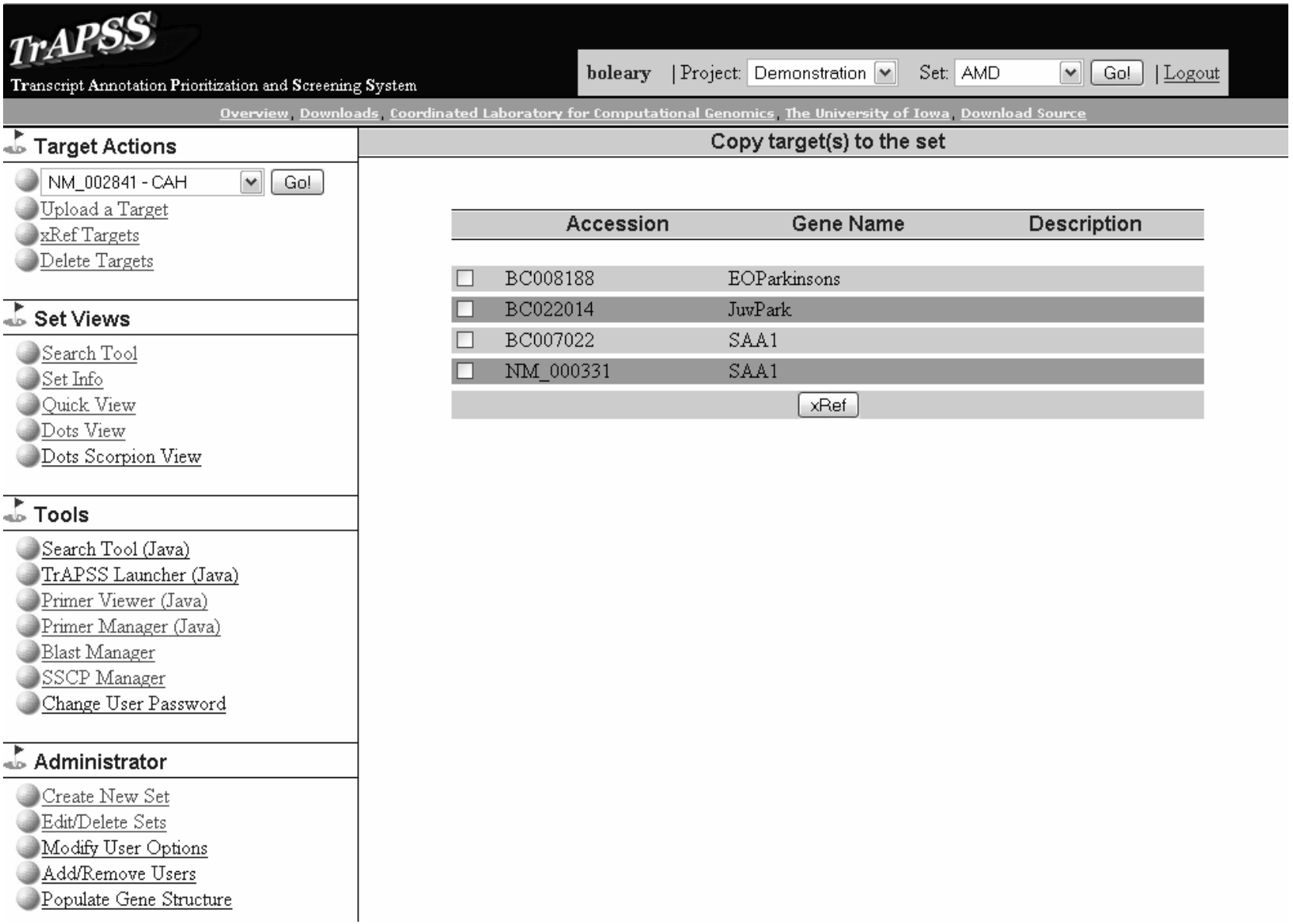
Administrator

Create New Set
Edit/Delete Sets
Modify User Options
Add/Remove Users
Populate Gene Structure

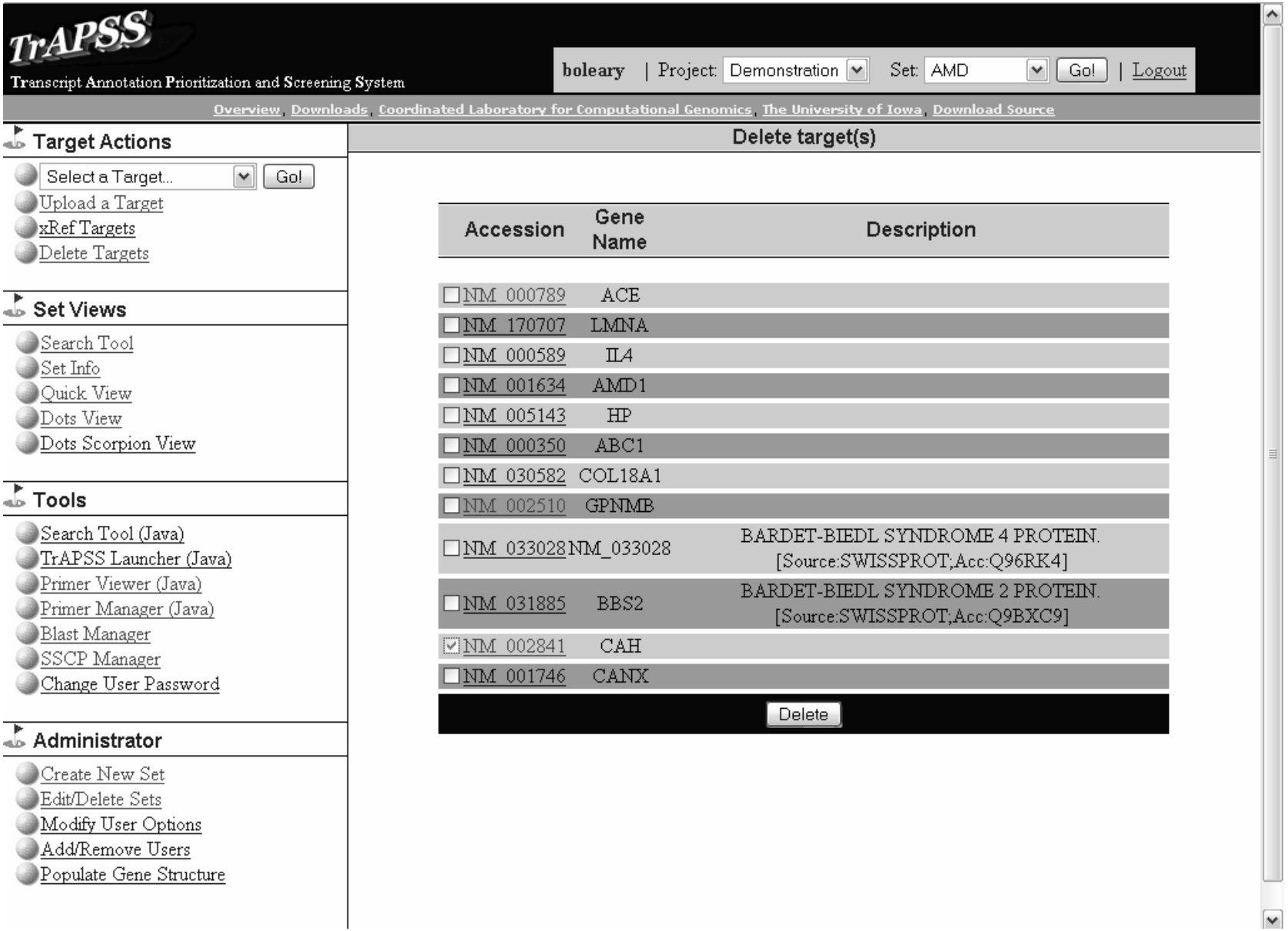
Wnt Signaling Pathway

Gene Name	Accession	AMD	RP	Glaucoma	Alternative Symbols
DSH	NM_004421				DVL, MGC54245
GSK3B	NM_002093				
CTNNB1	NM_001904			●	CTNNB
MAP3K7	NM_003188				TAK1, TGF1a
TCF1	NM_000545				HNF1, LFB1, HNF1A, MODY3
BTRC	NM_003939				FWD1, BTRCP, FBW1A, bTrCP, FBXW1A,MGC4643, betaT
CREBBP	NM_004380				CBP, RTS, RSTS
PPARD	NM_006238				FAAR, NUC1, NUCI, NR1C2, NUCII
LRP5	NM_002335			●	HBM, LR3, OPS, LRP7, OPPG, BMND1,VBCH2
WIF1	NM_007191				WIF1
FZD1	NM_003505			●	
APC	NM_000038				GS, DP2, DP3, FAP, FPC, DP2.5
PPP2CA	NM_002715				PP2CA
NLK	NM_016231				
DKK1	NM_012242				SK, DKK-1
NKD1	NM_033119				
WNT2B	NM_024494			●	
WNT5A	NM_003392			●	
FZD1	NM_003505			●	
FZD2	NM_001466			●	
FZD7	NM_003507			●	
AXIN1	AF009674			●	
AXIN2	NM_004655			●	
DKK3	NM_015881			●	
SFRP1	NM_003012			●	

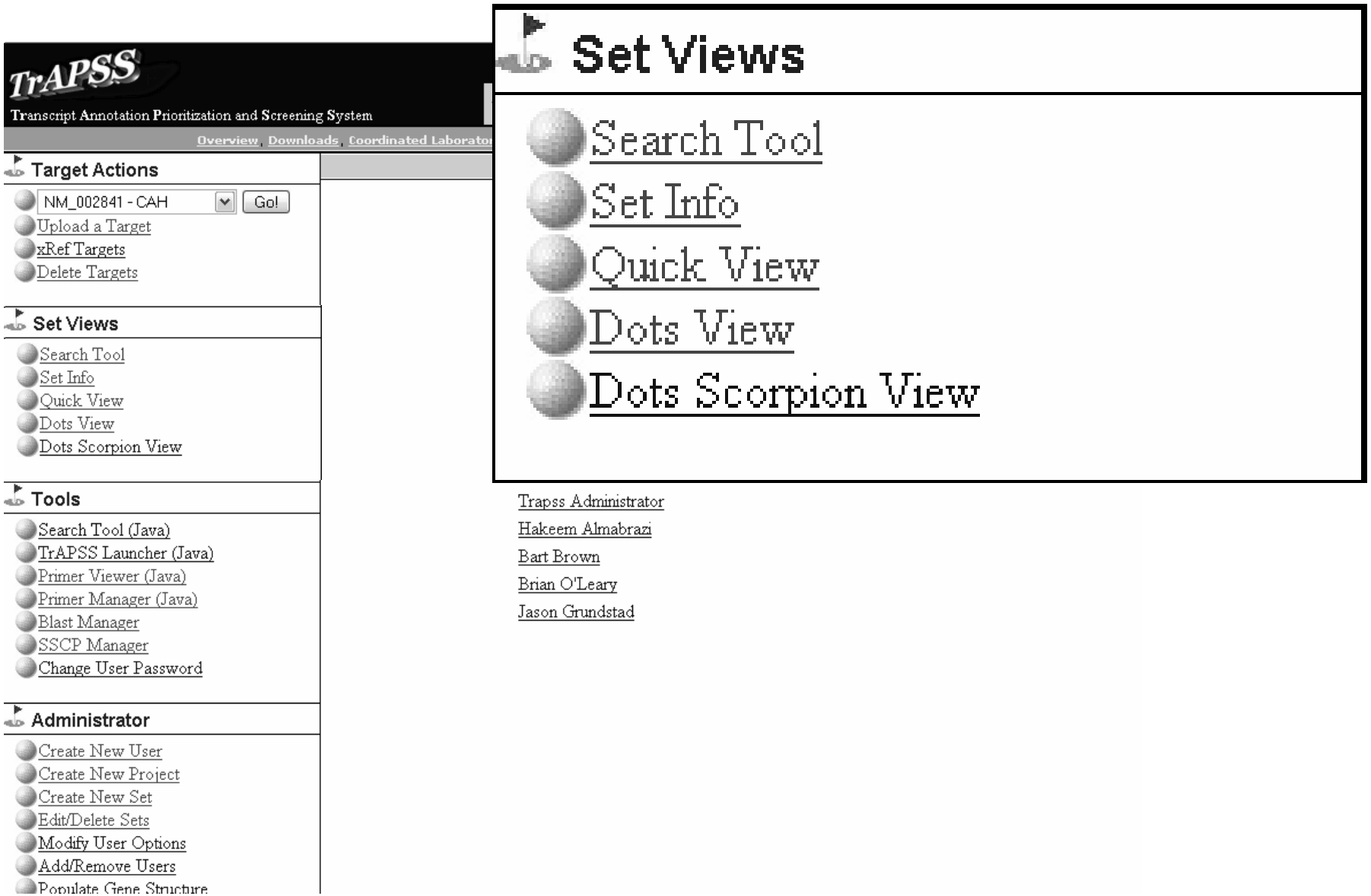
Cross-Reference Targets



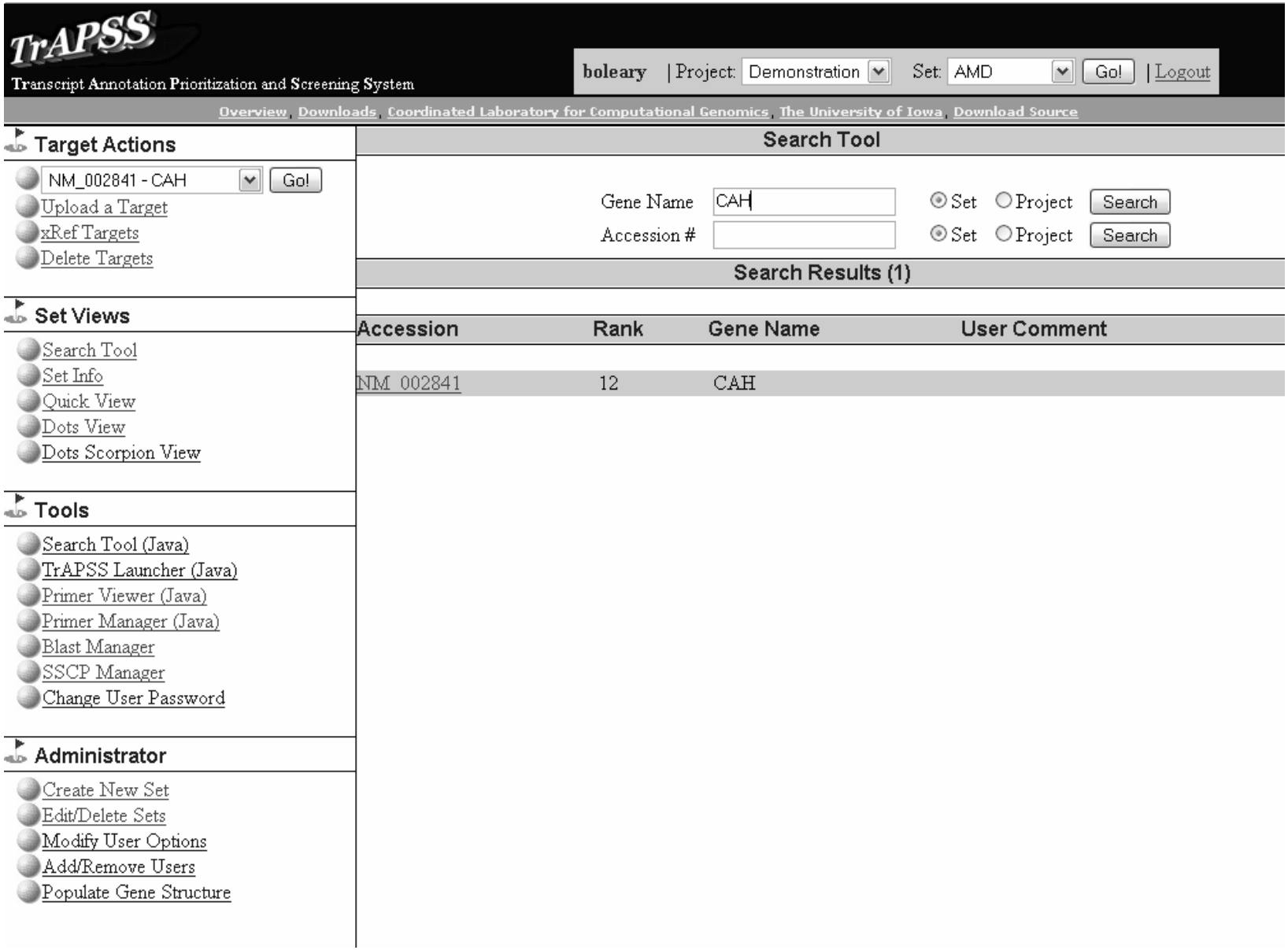
Delete Targets



Set Views


TrAPSS
Transcript Annotation Prioritization and Screening System
Overview, Downloads, Coordinated Laborator
Target Actions
NM_002841 - CAH
Go!
Upload a Target
xRef Targets
Delete Targets
Set Views
Search Tool
Set Info
Quick View
Dots View
Dots Scorpion View
Tools
Search Tool (Java)
TrAPSS Launcher (Java)
Primer Viewer (Java)
Primer Manager (Java)
Blast Manager
SSCP Manager
Change User Password
Administrator
Create New User
Create New Project
Create New Set
Edit/Delete Sets
Modify User Options
Add/Remove Users
Populate Gene Structure
Set Views
Search Tool
Set Info
Quick View
Dots View
Dots Scorpion View
Trapss Administrator
Hakeem Almabrazi
Bart Brown
Brian O'Leary
Jason Grundstad

Search Tool


TrAPSS
Transcript Annotation Prioritization and Screening System
boleary | Project: Demonstration Set: AMD Go! | Logout
Overview, Downloads, Coordinated Laboratory for Computational Genomics, The University of Iowa, Download Source
Target Actions
NM_002841 - CAH Go!
Upload a Target
xRef Targets
Delete Targets
Set Views
Search Tool
Set Info
Quick View
Dots View
Dots Scorpion View
Tools
Search Tool (Java)
TrAPSS Launcher (Java)
Primer Viewer (Java)
Primer Manager (Java)
Blast Manager
SSCP Manager
Change User Password
Administrator
Create New Set
Edit/Delete Sets
Modify User Options
Add/Remove Users
Populate Gene Structure
Search Tool
Gene Name CAH Set Project Search
Accession # Set Project Search
Search Results (1)
Accession Rank Gene Name User Comment
NM_002841 12 CAH

Set Information

TrAPSS
Transcript Annotation Prioritization and Screening System

boleary | Project: Demonstration Set: AMD Go! | Logout

Overview, Downloads, Coordinated Laboratory for Computational Genomics, The University of Iowa, Download Source

Target Actions

- NM_002841 - CAH Go!
- Upload a Target
- xRef Targets
- Delete Targets

Set Views

- Search Tool
- Set Info
- Quick View
- Dots View
- Dots Scorpion View

Tools

- Search Tool (Java)
- TrAPSS Launcher (Java)
- Primer Viewer (Java)
- Primer Manager (Java)
- Blast Manager
- SSCP Manager
- Change User Password

Administrator

- Create New Set
- Edit/Delete Sets
- Modify User Options
- Add/Remove Users
- Populate Gene Structure

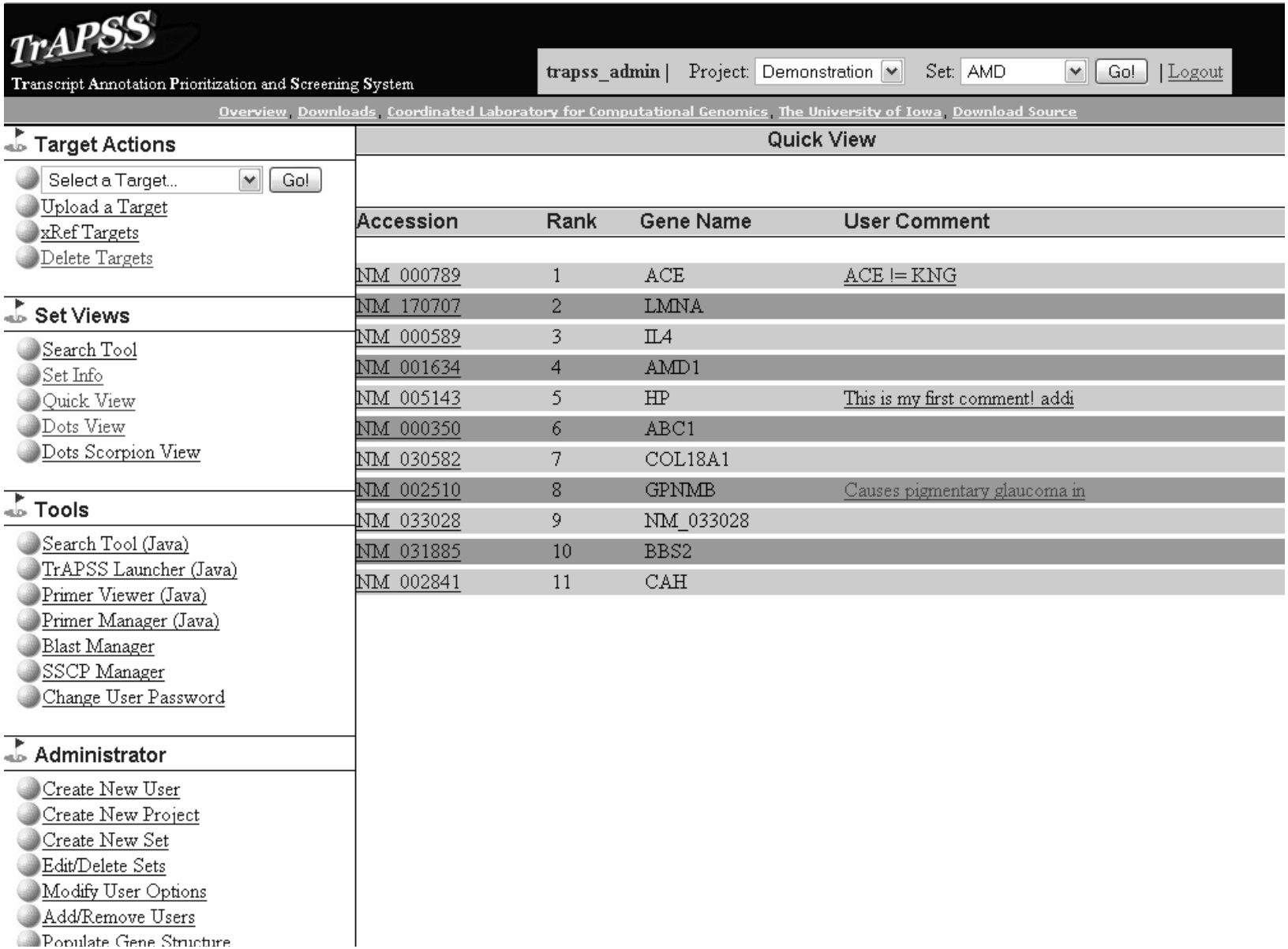
Set Information

Name	AMD
Creation Date	2004-02-18
Description	Age Related Macular Degeneration
Total Targets	12
Total Sequences	15
Total Transcripts	22
Total Primer Pairs	3

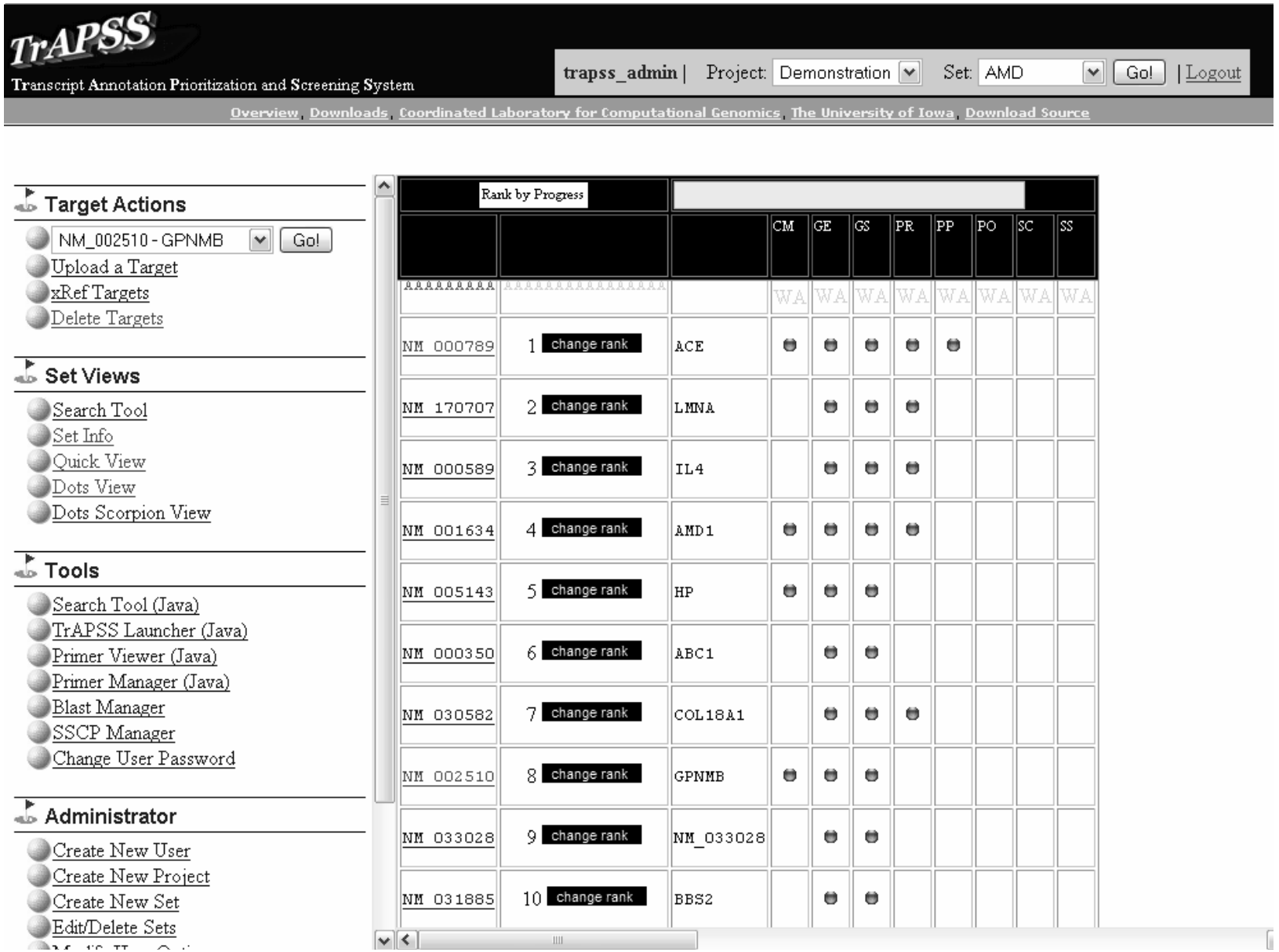
To contact any of these users CLICK on the links.

Terry Braun
Trapss Administrator
Hakeem Almabrazi
Bart Brown
Brian O'Leary
Jason Grundstad

Quick View

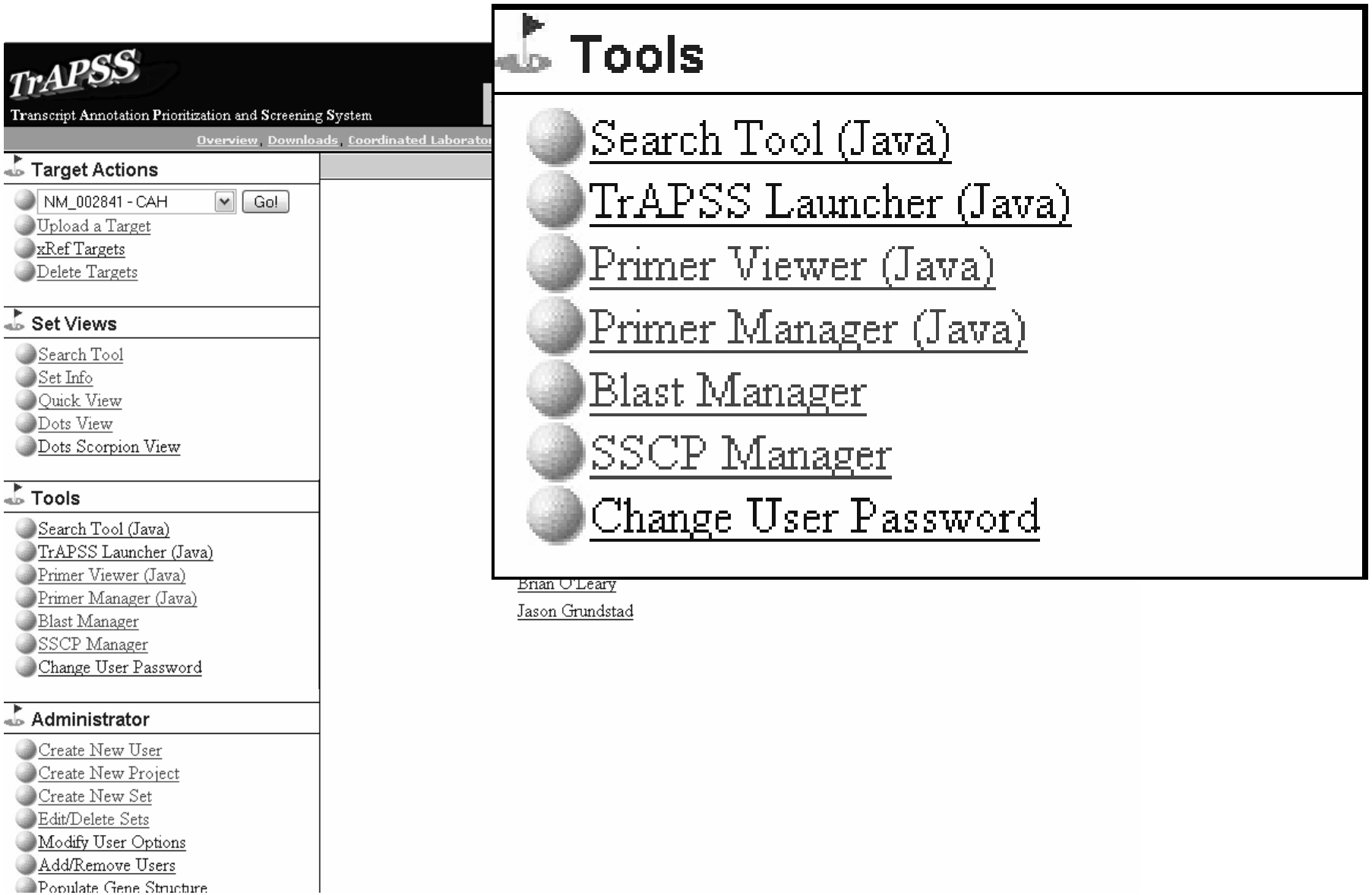

TrAPSS
Transcript Annotation Prioritization and Screening System
trapss_admin | Project: Demonstration Set: AMD Go! | Logout
Overview, Downloads, Coordinated Laboratory for Computational Genomics, The University of Iowa, Download Source
Target Actions
Select a Target... Go!
Upload a Target
xRef Targets
Delete Targets
Set Views
Search Tool
Set Info
Quick View
Dots View
Dots Scorpion View
Tools
Search Tool (Java)
TrAPSS Launcher (Java)
Primer Viewer (Java)
Primer Manager (Java)
Blast Manager
SSCP Manager
Change User Password
Administrator
Create New User
Create New Project
Create New Set
Edit/Delete Sets
Modify User Options
Add/Remove Users
Populate Gene Structure
Quick View
Accession Rank Gene Name User Comment
NM_000789 1 ACE ACE != KNG
NM_170707 2 LMNA
NM_000589 3 IL4
NM_001634 4 AMD1
NM_005143 5 HP This is my first comment! addi
NM_000350 6 ABC1
NM_030582 7 COL18A1
NM_002510 8 GPNMB Causes pigmentary glaucoma in
NM_033028 9 NM_033028
NM_031885 10 BBS2
NM_002841 11 CAH

Dots View

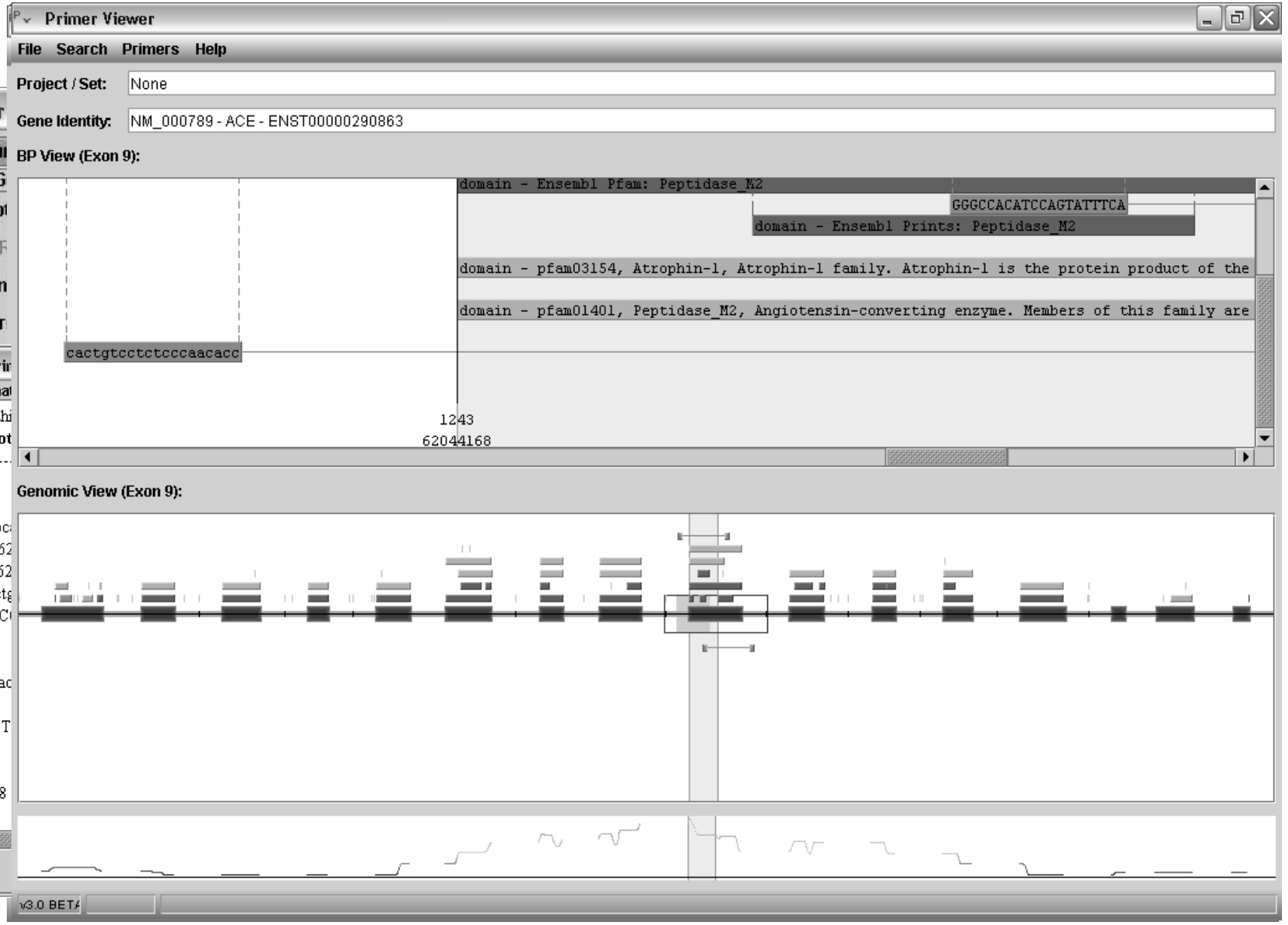

TrAPSS
Transcript Annotation Prioritization and Screening System
trapss_admin | Project: Demonstration Set: AMD Go! | Logout
Overview, Downloads, Coordinated Laboratory for Computational Genomics, The University of Iowa, Download Source
Target Actions
NM_002510 - GPNMB
Go!
Upload a Target
xRef Targets
Delete Targets
Set Views
Search Tool
Set Info
Quick View
Dots View
Dots Scorpion View
Tools
Search Tool (Java)
TrAPSS Launcher (Java)
Primer Viewer (Java)
Primer Manager (Java)
Blast Manager
SSCP Manager
Change User Password
Administrator
Create New User
Create New Project
Create New Set
Edit/Delete Sets
Rank by Progress
CM GE GS PR PP PO SC SS
WA WA WA WA WA WA WA WA
NM_000789 1 change rank ACE
NM_170707 2 change rank LMNA
NM_000589 3 change rank IL4
NM_001634 4 change rank AMD1
NM_005143 5 change rank HP
NM_000350 6 change rank ABC1
NM_030582 7 change rank COL18A1
NM_002510 8 change rank GPNMB
NM_033028 9 change rank NM_033028
NM_031885 10 change rank BBS2

Dots Scorpion View

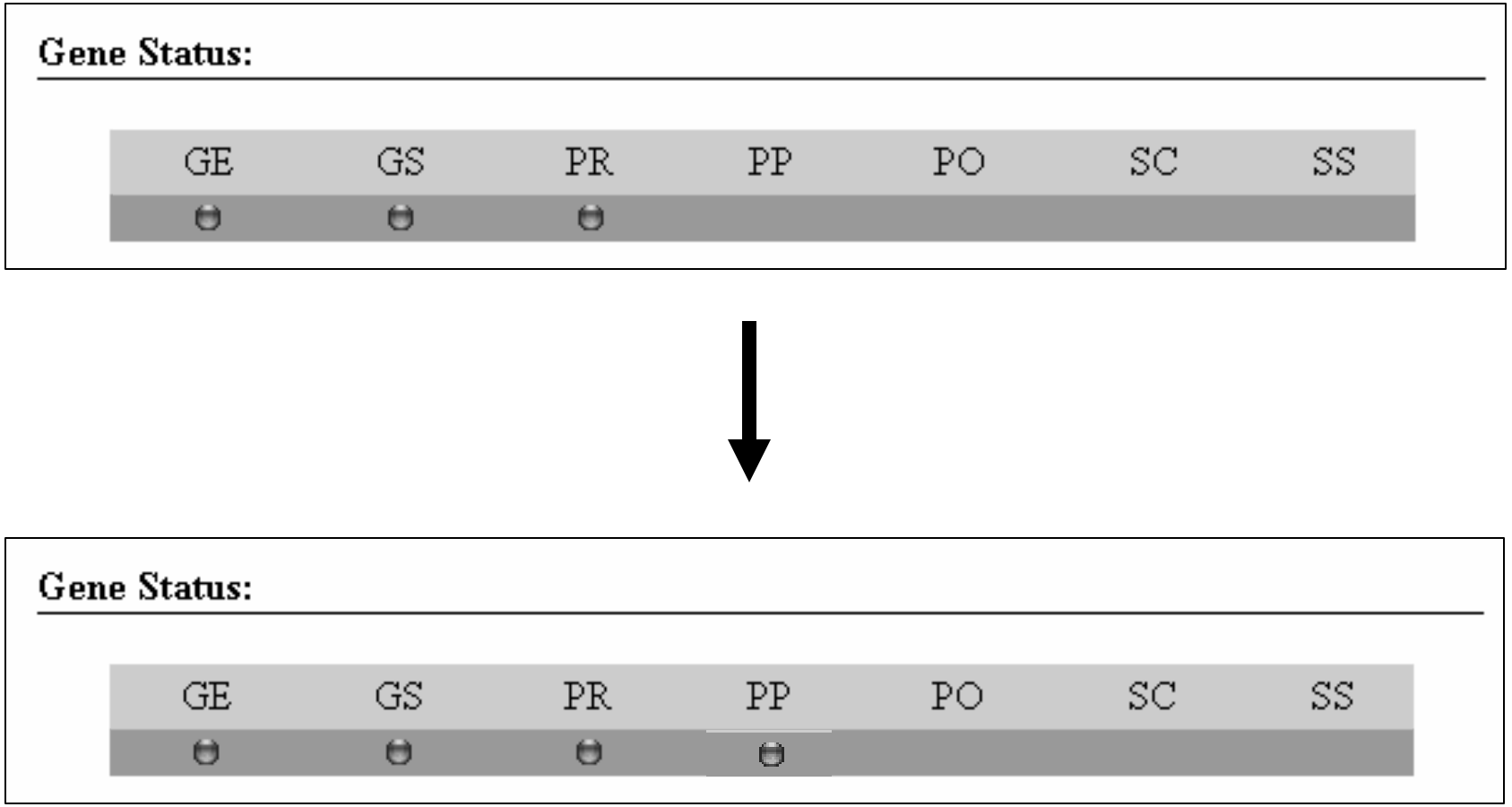
Tools


TrAPSS
Transcript Annotation Prioritization and Screening System
Overview, Downloads, Coordinated Laborator
Target Actions
NM_002841 - CAH
Go!
Upload a Target
xRef Targets
Delete Targets
Set Views
Search Tool
Set Info
Quick View
Dots View
Dots Scorpion View
Tools
Search Tool (Java)
TrAPSS Launcher (Java)
Primer Viewer (Java)
Primer Manager (Java)
Blast Manager
SSCP Manager
Change User Password
Administrator
Create New User
Create New Project
Create New Set
Edit/Delete Sets
Modify User Options
Add/Remove Users
Populate Gene Structure
Tools
Search Tool (Java)
TrAPSS Launcher (Java)
Primer Viewer (Java)
Primer Manager (Java)
Blast Manager
SSCP Manager
Change User Password
Brian O'Leary
Jason Grundstad

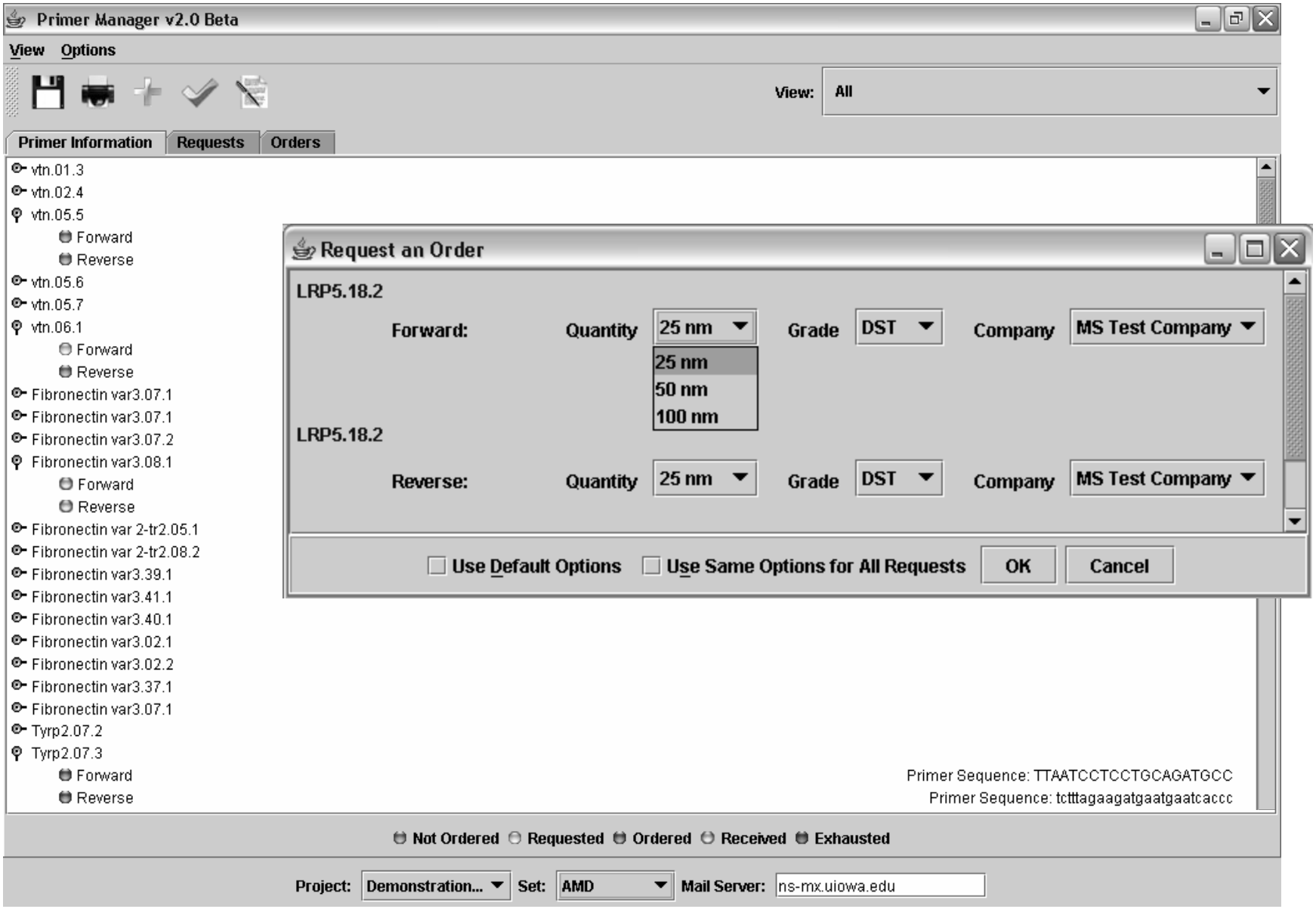
Primer Viewer



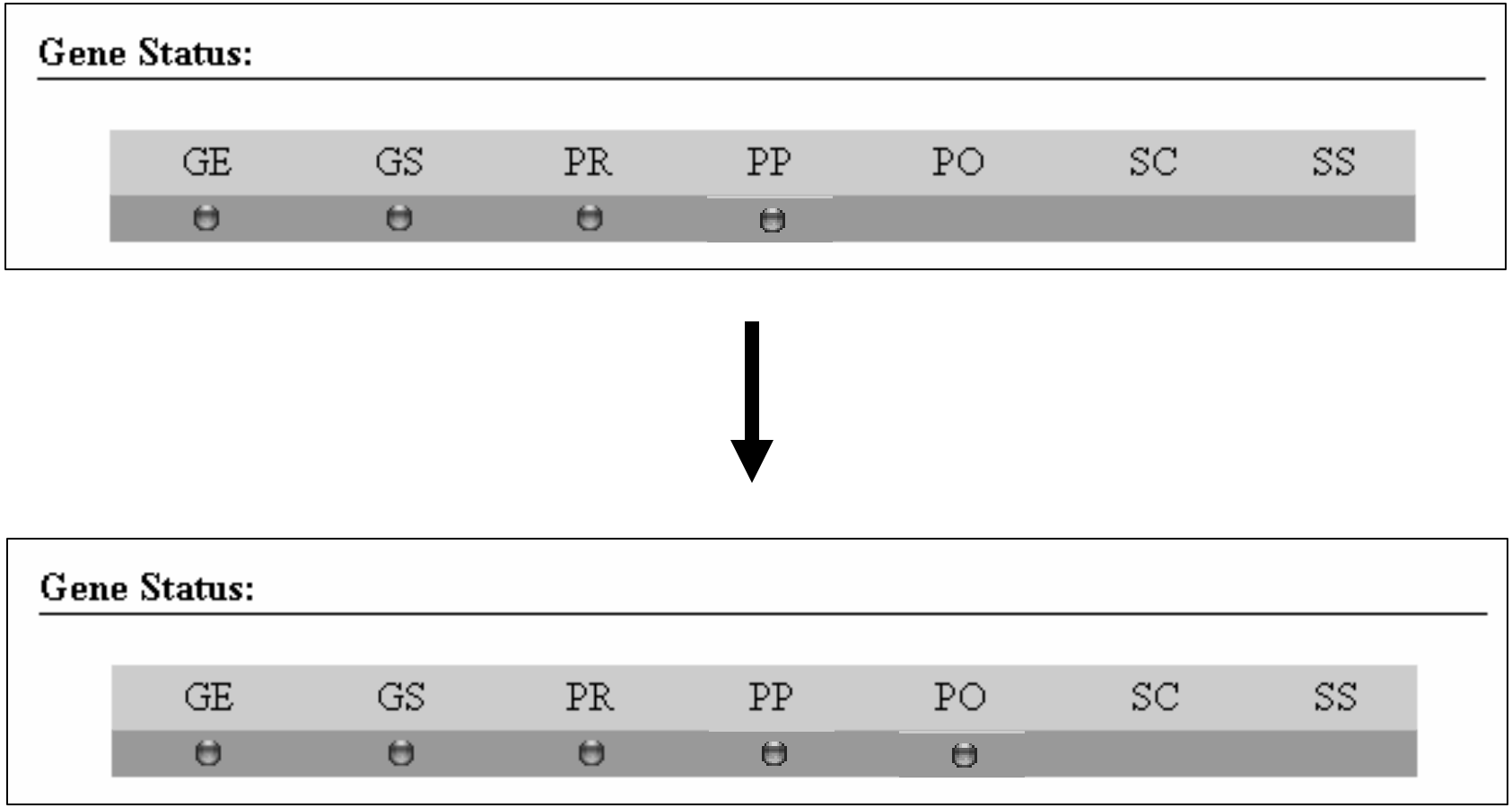
Dots after Picking Primers



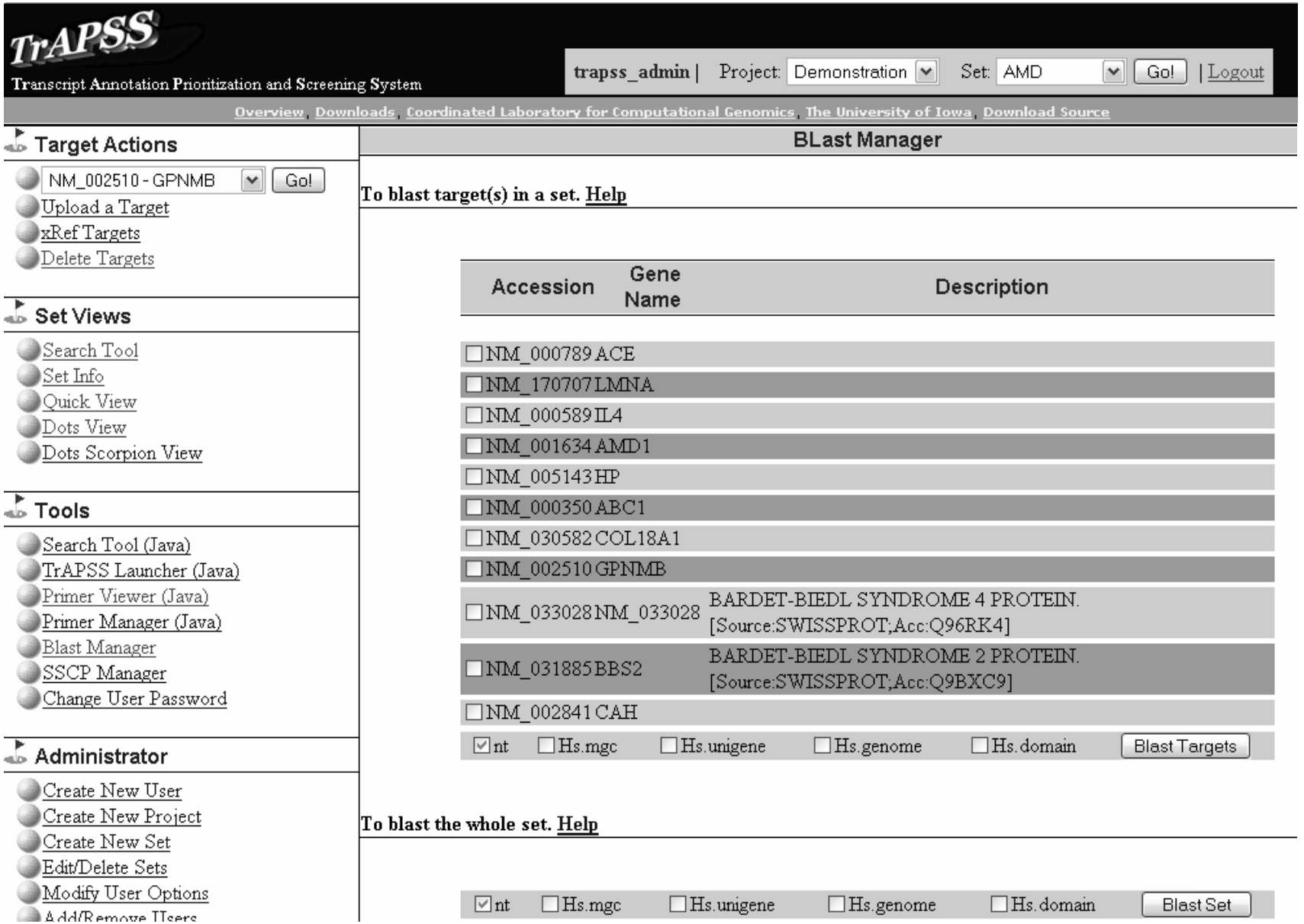
Primer Manager



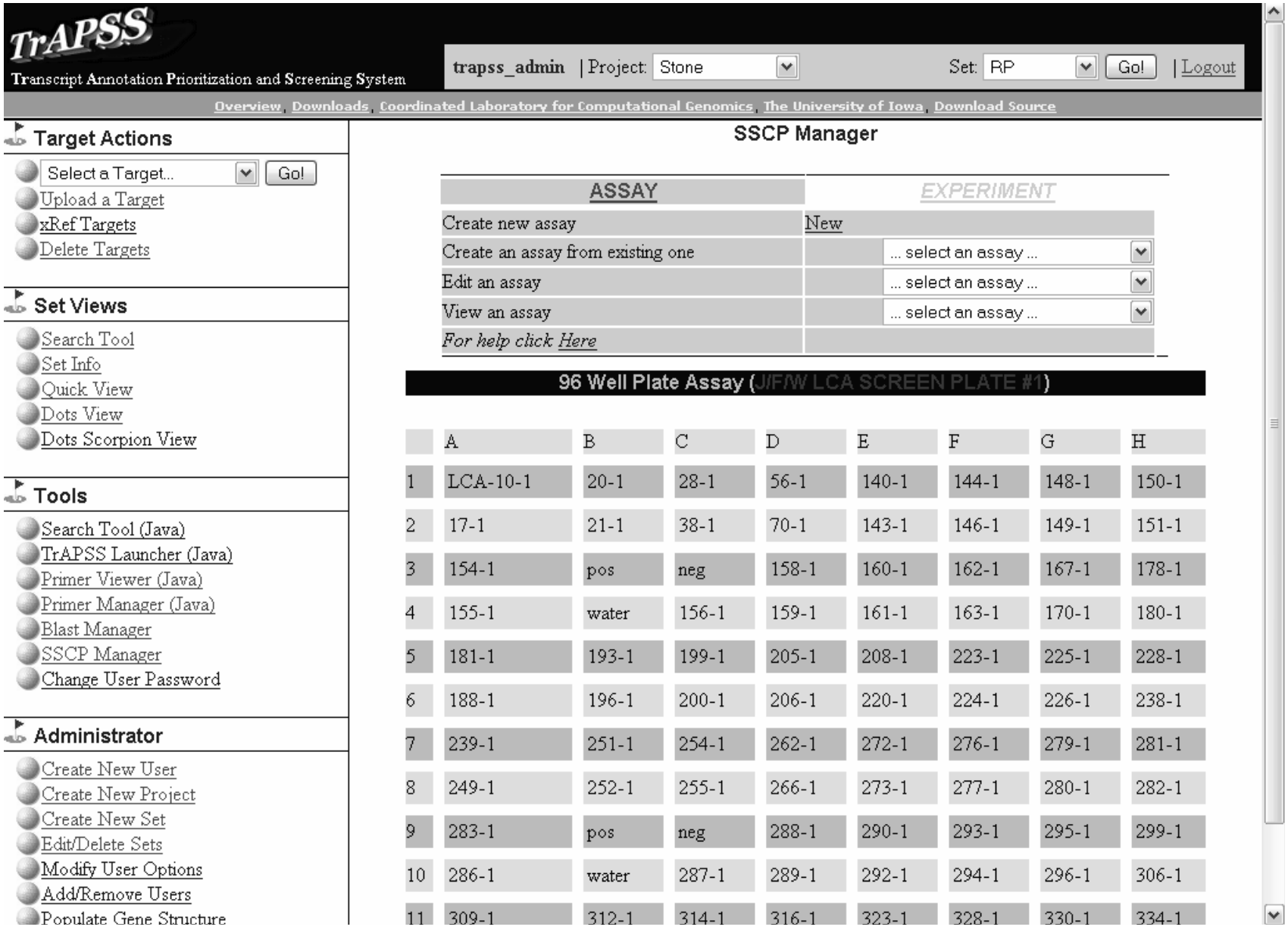
Dots after Ordering Primers



BLAST Manager



SSCP Manager



TrAPSS
Transcript Annotation Prioritization and Screening System

trapss_admin | Project: Stone | Set: RP | Go! | Logout

Overview, Downloads, Coordinated Laboratory for Computational Genomics, The University of Iowa, Download Source

Target Actions

- Select a Target... | Go!
- Upload a Target
- xRef Targets
- Delete Targets

Set Views

- Search Tool
- Set Info
- Quick View
- Dots View
- Dots Scorpion View

Tools

- Search Tool (Java)
- TrAPSS Launcher (Java)
- Primer Viewer (Java)
- Primer Manager (Java)
- Blast Manager
- SSCP Manager
- Change User Password

Administrator

- Create New User
- Create New Project
- Create New Set
- Edit/Delete Sets
- Modify User Options
- Add/Remove Users
- Populate Gene Structure

SSCP Manager

ASSAY	EXPERIMENT
Create new assay	New
Create an assay from existing one	... select an assay ...
Edit an assay	... select an assay ...
View an assay	... select an assay ...
For help click Here	

96 Well Plate Assay (JIFIW LCA SCREEN PLATE #1)

	A	B	C	D	E	F	G	H
1	LCA-10-1	20-1	28-1	56-1	140-1	144-1	148-1	150-1
2	17-1	21-1	38-1	70-1	143-1	146-1	149-1	151-1
3	154-1	pos	neg	158-1	160-1	162-1	167-1	178-1
4	155-1	water	156-1	159-1	161-1	163-1	170-1	180-1
5	181-1	193-1	199-1	205-1	208-1	223-1	225-1	228-1
6	188-1	196-1	200-1	206-1	220-1	224-1	226-1	238-1
7	239-1	251-1	254-1	262-1	272-1	276-1	279-1	281-1
8	249-1	252-1	255-1	266-1	273-1	277-1	280-1	282-1
9	283-1	pos	neg	288-1	290-1	293-1	295-1	299-1
10	286-1	water	287-1	289-1	292-1	294-1	296-1	306-1
11	309-1	312-1	314-1	316-1	323-1	328-1	330-1	334-1

SSCP Manager

TrAPSS
Transcript Annotation Prioritization and Screening System

Overview, Downloads, Coordin

Target Actions
- NM_033282 - OPN4 Go!
- Upload a Target
- xRef Targets
- Delete Targets

Set Views
- Search Tool
- Set Info
- Quick View
- Dots View
- Dots Scorpion View

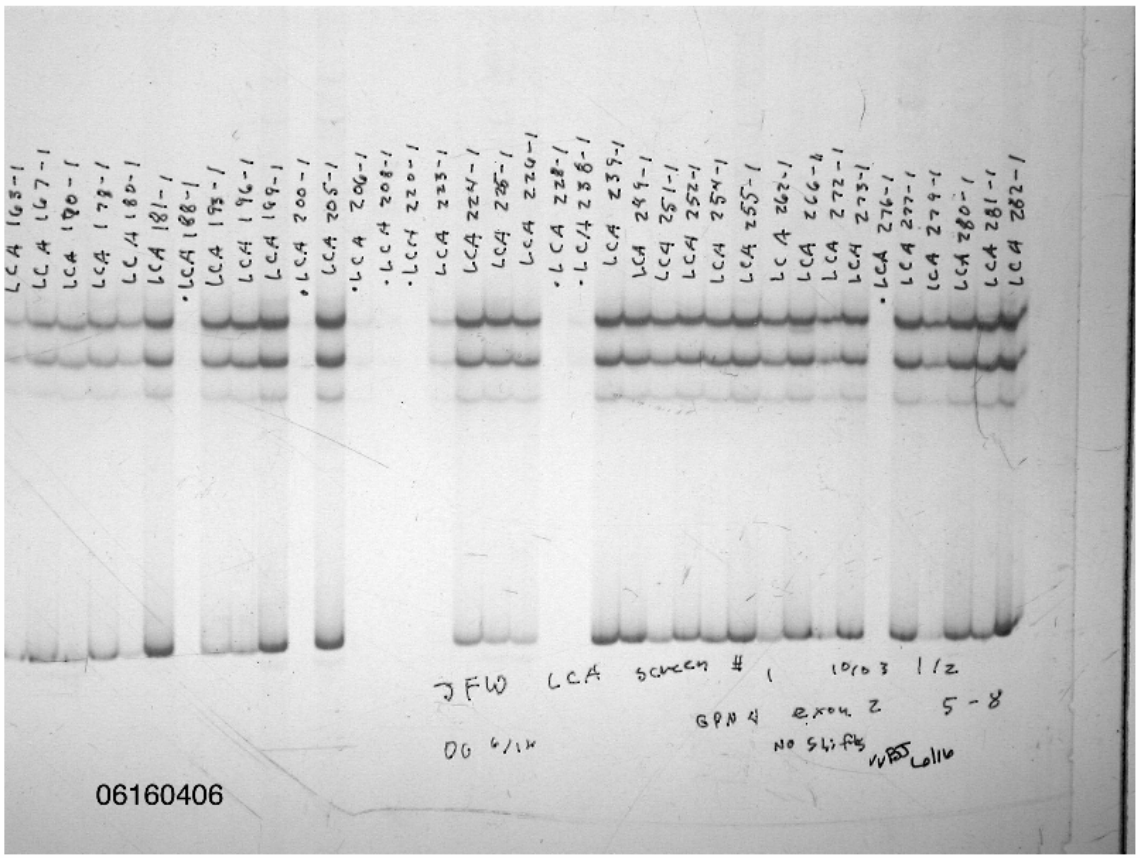
Tools
- Search Tool (Java)
- TrAPSS Launcher (Java)
- Primer Viewer (Java)
- Primer Manager (Java)
- Blast Manager
- SSCP Manager
- Change User Password

Administrator
- Create New User
- Create New Project
- Create New Set
- Edit/Delete Sets
- Modify User Options
- Add/Remove Users

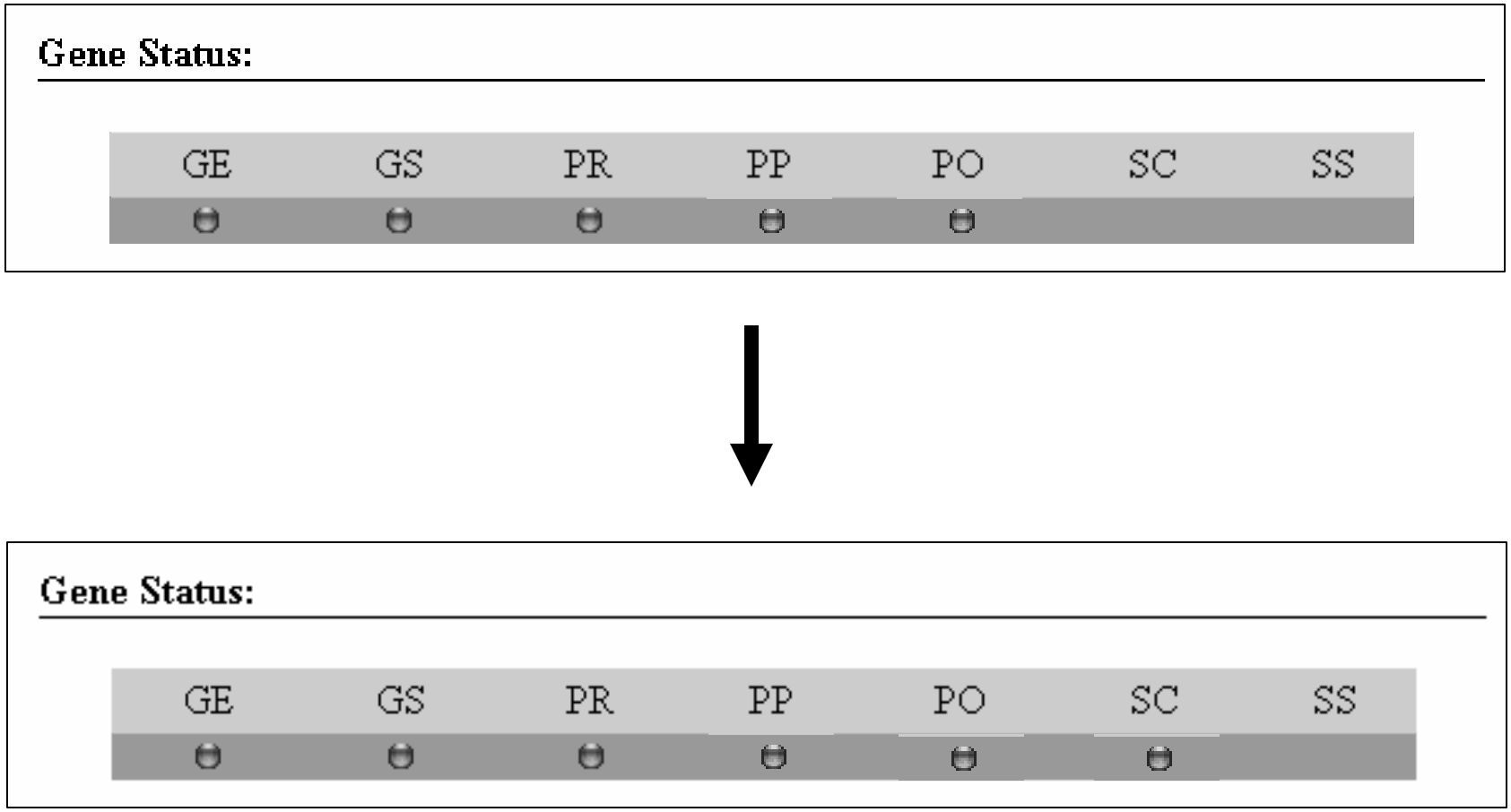
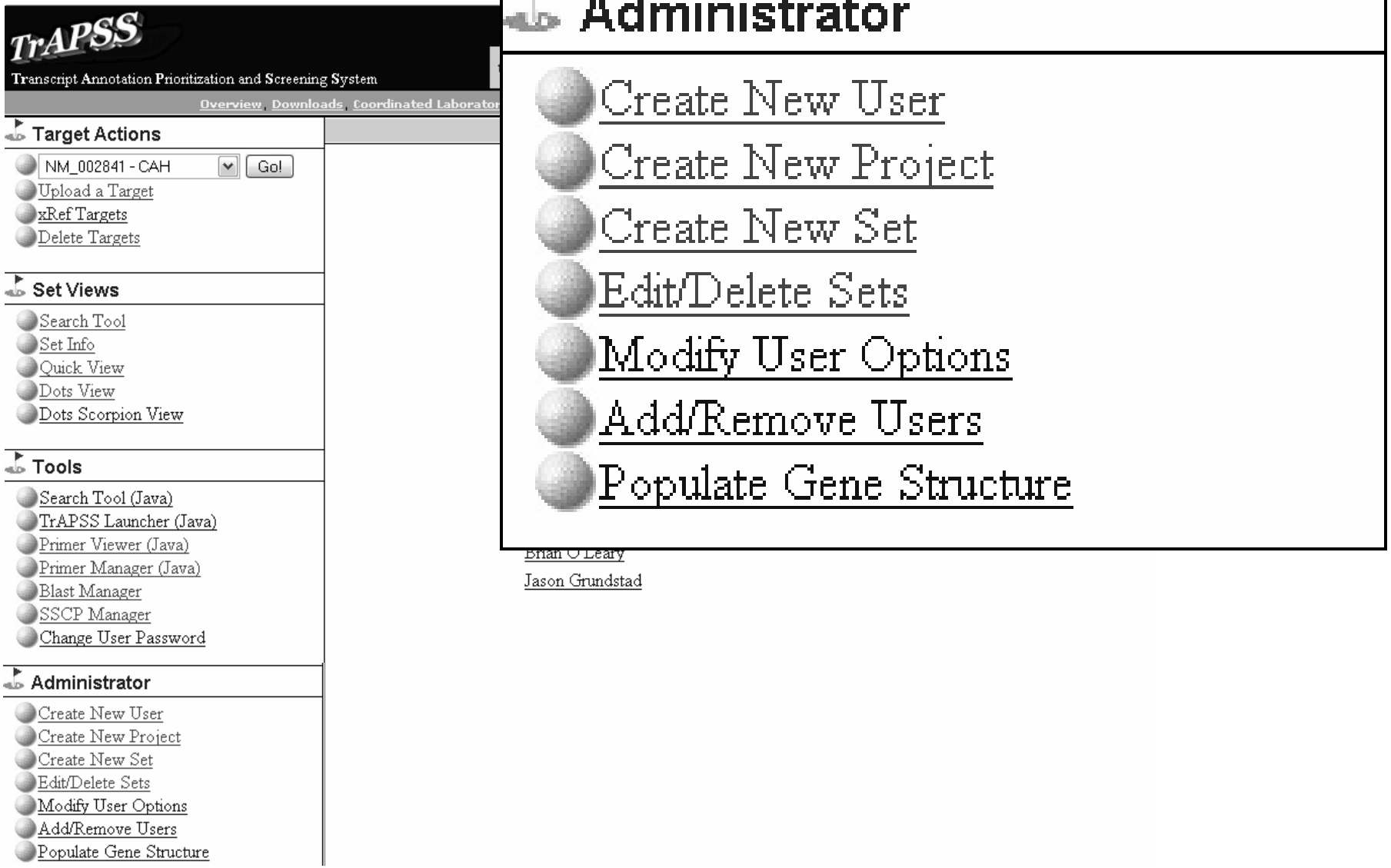
For the target
Assay Selection

Subject		
LCA-10-1		
17-1		
20-1		
21-1		
28-1	5	
38-1	6	
56-1	7	
70-1	8	
140-1	9	
143-1	10	0
144-1	11	0
146-1	12	0

Zoom Level: 25% 50% 75% 100% 125%



Dots after SSCP Results Entered



Administrator Tools