In [1]:
```
using DataFrames
```

In [2]:
```
using Distributions
```

In [3]:
```
using(Gadfly)
```

Ch1

In [4]:
```
Ch1 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch1/ch1.Hap
```

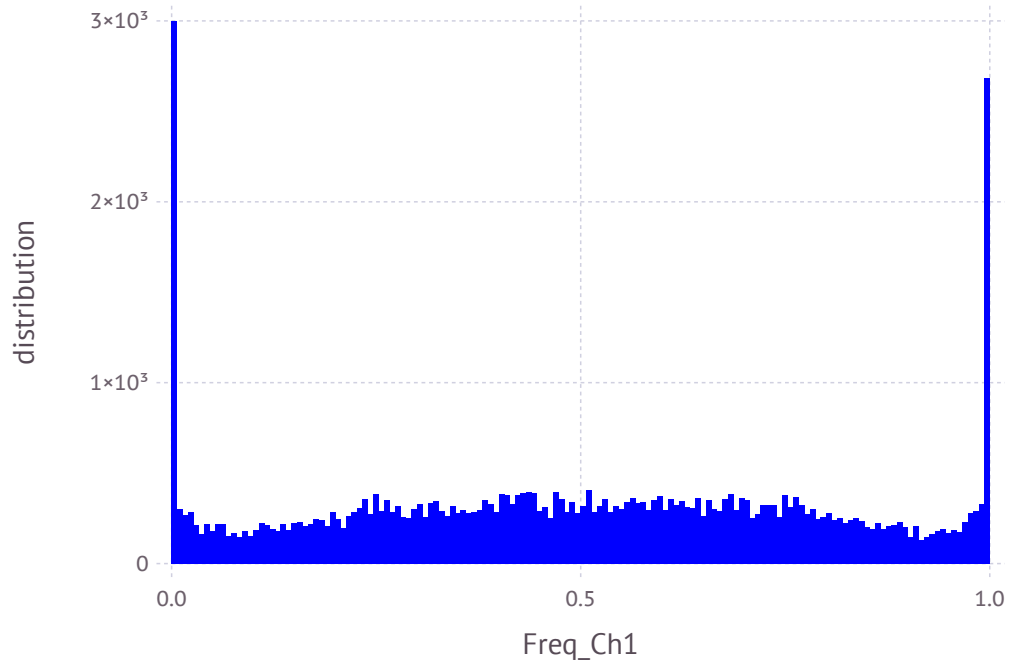
Out[4]:
```
1442x46492 Array{Int64,2}:
 1  0  0  0  1  0  1  1  1  0  1  1  0  …  1  1  0  0  0  0  1  1  0  0
 0  0
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  1  1  1  0  0  0  1  0  0
 1  1
 1  0  0  0  1  0  1  1  0  0  1  1  0     1  0  0  0  0  1  1  1  0  0
 0  0
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  0  0  0  0  1  0  1  0  0
 1  1
 1  0  0  0  1  0  1  1  0  0  1  1  0     1  0  0  0  0  1  1  1  0  0
 0  0
 1  1  0  1  1  0  0  0  1  0  0  1  1  …  1  0  0  0  0  1  1  1  0  0
 0  0
 1  0  0  0  1  0  1  1  0  0  1  1  0     1  1  0  0  0  0  1  1  0  0
 0  0
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  1  0  0  0  0  1  1  0  0
 0  0
 0  1  0  1  1  0  0  0  0  0  0  0  1     1  1  0  0  0  0  1  1  0  0
 0  0
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  1  1  1  0  0  0  1  0  0
 1  1
 1  0  0  0  0  1  0  1  1  0  1  1  1  …  0  1  1  1  0  0  0  1  0  0
 1  1
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  1  0  0  0  0  0  1  1  1
 1  0
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  0  0  0  0  1  1  1  0  0
 0  0
 ⋮              ⋮              ⋮          ⋱  ⋮              ⋮              ⋮

 0  1  0  1  1  0  0  0  1  0  0  1  1  …  1  0  0  0  0  1  1  1  0  0
 0  0
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  0  0  0  0  1  0  1  0  0
 1  1
 0  1  0  1  1  0  0  0  1  0  0  1  1     1  0  0  0  0  1  1  1  0  0
 0  0
 1  0  0  0  1  0  1  1  0  0  1  1  0     1  0  0  0  0  1  0  1  0  0
 1  1
 1  0  0  0  0  1  0  1  1  0  1  1  1     1  0  0  0  0  1  0  1  0  0
 1  1
 1  1  0  1  1  0  0  0  1  0  0  1  1  …  1  0  0  0  0  1  1  1  0  0
 0  0
 1  0  0  0  1  0  1  1  0  0  1  1  0     1  0  0  0  0  1  0  1  0  0
 1  1
 1  1  0  1  1  0  0  0  1  0  0  1  1     1  0  0  0  0  1  1  1  0  0
 0  0
 0  1  0  1  1  0  0  0  1  0  0  1  1     1  1  0  0  0  0  0  1  1  1
 1  0
 1  0  0  0  0  1  0  1  1  0  1  1  1     1  0  0  0  0  1  0  1  0  0
 1  1
 0  1  0  1  1  0  0  0  0  0  0  0  1  …  1  0  0  0  0  1  1  1  0  0
 0  0
 1  0  0  0  1  0  1  1  0  0  1  1  0     1  0  0  0  0  1  1  1  0  0
 0  0
```

In [5]:
```
FreqCh1 = mean(Ch1,1)
```

Out[5]:
```
1x46492 Array{Float64,2}:
 0.821082  0.516644  0.0  0.51387  0.926491  …  0.483356  0.711512  0.198
336
```

In [6]:
```
plot(x=FreqCh1, Geom.histogram, Guide.XLabel("Freq_Ch1"), Guide.YLabel("dist
```

Out[6]:



```
In [7]: CleanCh1 = Ch1[:, 0.01 .< FreqCh1 .< 0.99]
```

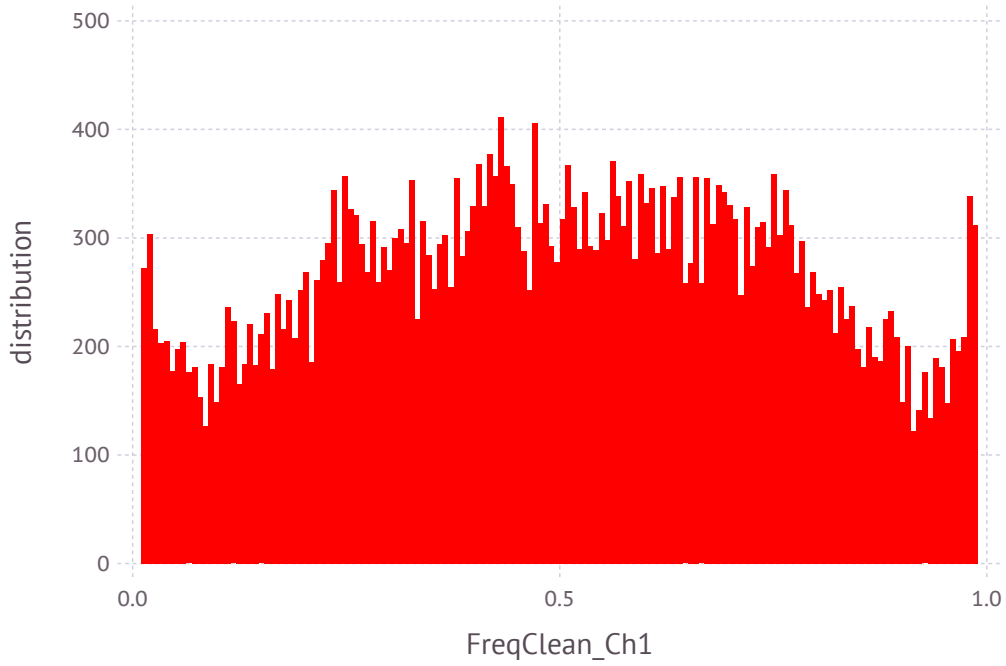
```
Out[7]: 1442x40499 Array{Int64,2}:
 1  0  0  1  0  1  1  1  1  1  0  0  0  …  1  1  1  0  0  0  0  1  0  0
 0  0
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  1  1  1  0  0  0  0  0
 1  1
 1  0  0  1  0  1  1  0  1  1  0  0  0     0  1  0  0  0  0  1  1  0  0
 0  0
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  0  0  0  0  1  0  0  0
 1  1
 1  0  0  1  0  1  1  0  1  1  0  0  0     0  1  0  0  0  0  1  1  0  0
 0  0
 1  1  1  1  0  0  0  1  0  1  1  1  1  …  1  1  0  0  0  0  1  1  0  0
 0  0
 1  0  0  1  0  1  1  0  1  1  0  0  0     1  1  1  0  0  0  0  1  0  0
 0  0
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  1  0  0  0  0  1  0  0
 0  0
 0  1  1  1  0  0  0  0  0  0  1  1  1     1  1  1  0  0  0  0  1  0  0
 0  0
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  1  1  1  0  0  0  0  0
 1  1
 1  0  0  0  1  0  1  1  1  1  1  1  1  …  1  0  1  1  1  0  0  0  0  0
 1  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  1  0  0  0  0  0  1  1
 1  0
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  0  0  0  0  1  1  0  0
 0  0
 ⋮              ⋮              ⋮          ⋱          ⋮              ⋮

 0  1  1  1  0  0  0  1  0  1  1  1  1  …  1  1  0  0  0  0  1  1  0  0
 0  0
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  0  0  0  0  1  0  0  0
 1  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     1  1  0  0  0  0  1  1  0  0
 0  0
 1  0  0  1  0  1  1  0  1  1  0  0  0     1  1  0  0  0  0  1  0  0  0
 1  1
 1  0  0  0  1  0  1  1  1  1  1  1  1     1  1  0  0  0  0  1  0  0  0
 1  1
 1  1  1  1  0  0  0  1  0  1  1  1  1  …  1  1  0  0  0  0  1  1  0  0
 0  0
 1  0  0  1  0  1  1  0  1  1  0  0  0     1  1  0  0  0  0  1  0  0  0
 1  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  0  0  0  0  1  1  0  0
 0  0
 0  1  1  1  0  0  0  1  0  1  1  1  1     1  1  1  0  0  0  0  0  1  1
 1  0
 1  0  0  0  1  0  1  1  1  1  1  1  1     1  1  0  0  0  0  1  0  0  0
 1  1
 0  1  1  1  0  0  0  0  0  0  1  1  1  …  0  1  0  0  0  0  1  1  0  0
 0  0
 1  0  0  1  0  1  1  0  1  1  0  0  0     0  1  0  0  0  0  1  1  0  0
 0  0
```

In [8]:
```
FreqCleanCh1 = mean(CleanCh1,1)
```

Out[8]:
```
1x40499 Array{Float64,2}:
 0.821082  0.516644  0.51387  0.926491  …  0.483356  0.711512  0.198336
```

In [9]:
```
plot(x=FreqCleanCh1, Geom.histogram, Guide.XLabel("FreqClean_Ch1"), Guide.YLa
```

Out[9]:



In [10]:
```
Ch1stream = open("ch1/CleanCh1.txt", "w")
```

Out[10]:
```
IOStream(<file ch1/CleanCh1.txt>)
```

In [11]:
```
for i in 1:size(CleanCh1,1)
    for j in 1:size(CleanCh1,2)
        @printf(Ch1stream , "%2d", CleanCh1[i,j])
    end
    @printf(Ch1stream , "\n")
end
```

In [12]:
```
close(Ch1stream )
```

Ch2

In [13]:
```
Ch2 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch2/ch2.Hap
```

Out[13]:
```
1442x40054 Array{Int64,2}:
 0  0  0  0  0  0  0  1  0  0  1  0  1  …  0  1  0  1  0  1  0  0  1  0
 0  1
 0  0  0  0  0  1  0  1  1  0  1  0  1     1  1  1  0  1  1  1  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     1  0  0  0  1  0  1  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  0  1  0  1  1  1  0  1  0
 1  1
 0  0  1  0  1  1  1  1  1  0  1  1  1     0  1  0  1  1  1  1  0  1  0
 1  1
 1  1  1  1  1  1  1  1  1  0  1  1  1  …  0  0  1  0  1  1  1  0  1  0
 1  1
 0  0  0  0  0  0  0  1  0  0  1  0  1     1  0  0  1  0  1  1  0  1  0
 1  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  1  0  0  1  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  1  0  1  0  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  0  1  1  1  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  0  1  0  1  …  0  1  1  1  1  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  1  1  1  1  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  0  1  0  1     0  1  1  1  0  1  1  0  1  0
 0  1
 ⋮                 ⋮                 ⋮           ⋱              ⋮                 ⋮

 0  0  0  0  0  0  0  1  0  1  0  0  1  …  0  1  0  1  1  1  1  0  1  0
 1  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  1  1  1  0  1  1  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  0  1  0  1     0  1  1  1  0  1  1  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     1  0  0  0  1  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  0  1  0  1     0  1  0  1  0  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1  …  0  1  1  0  1  0  1  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  1  1  0  1  0  1  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     1  0  0  1  0  1  1  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  0  1  0  1     0  1  0  1  0  1  1  0  1  0
 1  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  1  0  1  0  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1  …  0  1  0  1  0  1  0  0  1  0
 0  1
 0  0  0  0  0  0  0  1  0  1  0  0  1     0  1  1  1  1  1  0  0  1  0
 0  1
```

In [14]:
```
FreqCh2 = mean(Ch2,1)
```

Out[14]:
```
1x40054 Array{Float64,2}:
 0.00138696  0.00277393  0.12552  …  0.0  0.992372  0.0  0.282247  1.0
```

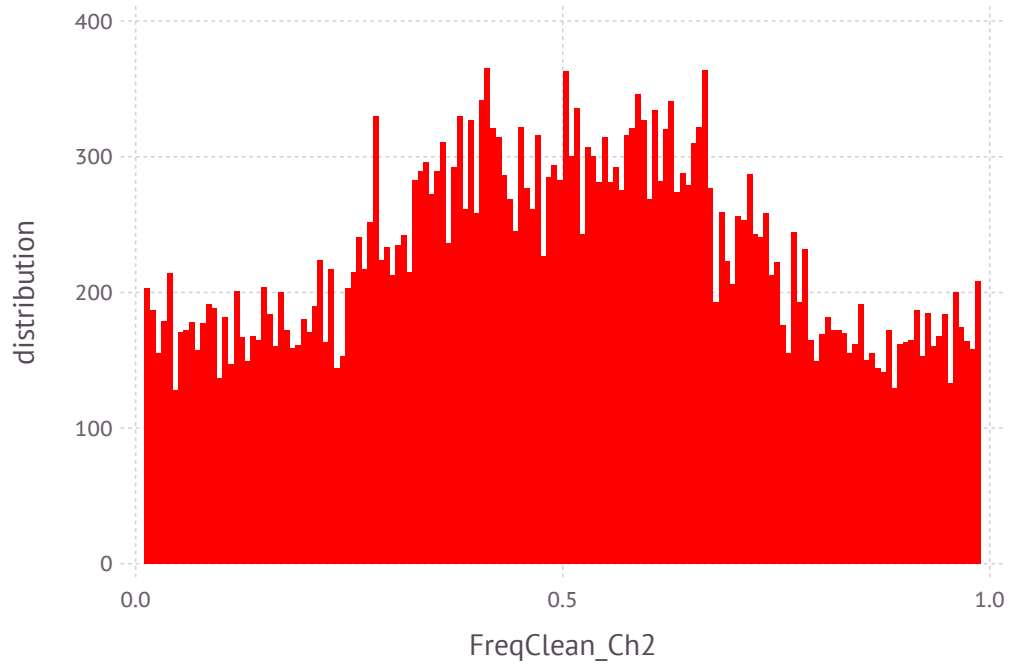
In [15]:
```
CleanCh2 = Ch2[:, 0.01 .< FreqCh2 .< 0.99];
```

In [16]:
```
FreqCleanCh2 = mean(CleanCh2,1)
```

Out[16]:
```
1x34227 Array{Float64,2}:
 0.12552  0.150485  0.144244  0.124827  …  0.941054  0.442441  0.282247
```

In [17]:
```
plot(x=FreqCleanCh2, Geom.histogram, Guide.XLabel("FreqClean_Ch2"), Guide.YLa
```

Out[17]:



In [18]:
```
Ch2stream = open("ch2/CleanCh2.txt", "w")
```

Out[18]:
```
IOStream(<file ch2/CleanCh2.txt>)
```

In [19]:
```
for i in 1:size(CleanCh2,1)
    for j in 1:size(CleanCh2,2)
        @printf(Ch2stream , "%2d", CleanCh2[i,j])
    end
    @printf(Ch2stream , "\n")
end
```

In [20]:
```
close(Ch2stream )
```

Ch3

In [21]:
```
Ch3 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch3/ch3.Hap
```

Out[21]:
```
1442x35574 Array{Int64,2}:
 0  1  1  0  0  1  0  1  1  1  0  1  0  …  1  1  1  0  0  1  1  1  0  0
 1  1
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1     1  1  0  0  1  1  1  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
 1  1  1  0  0  1  0  1  1  1  1  1  0  …  0  1  0  0  1  1  1  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  1  1  0  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  1  1  0  0  1  1
 1  0
 0  1  1  1  1  0  1  0  1  1  1  1  0     0  1  0  0  0  1  1  1  0  0
 1  1
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  1  1  1  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1  …  0  1  0  0  1  1  1  0  1  1
 1  0
 1  1  1  0  0  1  0  1  1  1  0  1  0     0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  0  1  1  0  1  1  1  0  1  0  1     0  1  0  0  1  1  1  0  1  1
 1  0
 ⋮              ⋮              ⋮          ⋱          ⋮              ⋮

 1  0  0  1  1  0  1  1  1  0  1  0  1  …  1  1  1  0  0  1  1  1  0  0
 1  1
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  0  1  1  1  0  0
 1  1
 1  0  1  1  1  0  1  0  1  0  1  0  1     1  1  0  0  1  1  1  0  1  1
 1  0
 1  1  1  0  0  1  0  1  1  1  0  1  0     1  1  1  0  0  1  1  1  0  0
 1  1
 1  0  0  1  1  0  1  1  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1  …  0  1  0  0  1  1  1  0  1  1
 1  0
 1  0  0  1  1  0  1  1  1  0  1  0  1     0  1  0  0  1  1  1  0  1  1
 1  0
 1  0  0  1  1  0  1  1  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  0  1  1  0  1  1  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  1  1  1  0  1  0  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  0  1  1  0  1  1  1  0  1  0  1  …  0  1  0  0  1  0  0  0  1  1
 1  0
 1  0  0  1  1  0  1  1  1  0  1  0  1     0  1  0  0  1  0  0  0  1  1
 1  0
```

In [22]:
```
FreqCh3 = mean(Ch3,1)
```

Out[22]:
```
1x35574 Array{Float64,2}:
 0.984743  0.193481  0.744105  0.821775  …  0.789182  0.811373  1.0  0.21
0818
```

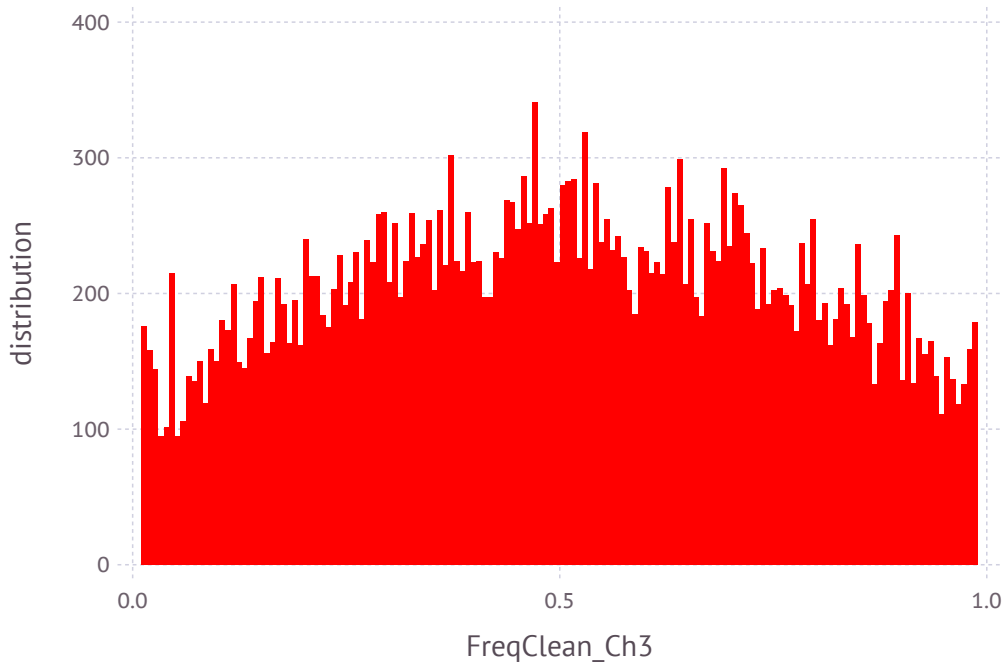
In [23]:
```
CleanCh3 = Ch3[:, 0.01 .< FreqCh3 .< 0.99];
```

In [24]:
```
FreqCleanCh3 = mean(CleanCh3,1)
```

Out[24]:
```
1x31034 Array{Float64,2}:
 0.984743  0.193481  0.744105  0.821775  …  0.789182  0.811373  0.210818
```

In [25]:
```
plot(x=FreqCleanCh3, Geom.histogram, Guide.XLabel("FreqClean_Ch3"), Guide.YLa
```

Out[25]:



In [26]:
```
Ch3stream = open("ch3/CleanCh3.txt", "w")
```

Out[26]:
```
IOStream(<file ch3/CleanCh3.txt>)
```

In [27]:
```
for i in 1:size(CleanCh3,1)
    for j in 1:size(CleanCh3,2)
        @printf(Ch3stream , "%2d", CleanCh3[i,j])
    end
    @printf(Ch3stream , "\n")
end
```

In [28]:
```
close(Ch3stream )
```

Ch4

In [29]:
```
Ch4 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch4/ch4.Hap
```

Out[29]:
```
1442x34976 Array{Int64,2}:
 0  1  1  0  0  0  0  1  0  1  1  1  1  …  0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  0  0  1  1  0  1  0  0  0
 0  1
 1  1  1  1  0  0  0  0  1  1  1  1  0     0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     0  0  0  1  1  0  1  0  1  0
 0  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     1  0  0  1  1  0  1  0  0  0
 0  1
 1  1  1  1  0  0  0  0  0  1  1  1  0  …  0  0  0  0  1  1  1  0  0  0
 0  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     1  0  0  1  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     0  0  0  1  1  1  1  0  1  0
 0  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     0  1  0  1  1  0  1  0  0  0
 0  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  0  0  1  1  1  0  …  0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  1  1  0  1  1  1  1  1  1     0  1  0  1  1  0  1  0  1  0
 0  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     1  0  0  1  1  0  1  0  0  0
 0  1
 ⋮                 ⋮                 ⋮          ⋱       ⋮                 ⋮
  ⋮
 0  1  1  1  0  0  0  0  0  1  1  1  0  …  1  0  0  1  1  0  1  0  0  0
 0  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     0  0  0  1  1  0  1  0  1  0
 0  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  0  0  1  1  1  0     1  0  0  1  1  0  1  0  0  0
 0  1
 0  1  1  1  0  0  0  1  0  1  1  1  1     0  1  0  1  1  0  1  0  1  0
 0  1
 1  1  1  1  0  0  0  0  0  1  1  1  0  …  0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  0  0  1  1  1  0     0  0  0  1  1  0  1  0  1  0
 0  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     0  1  0  1  1  0  1  0  1  0
 0  1
 1  1  1  1  0  0  0  0  0  1  1  1  0     0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  0  1  1  0  1  0  1  0
 0  1
 1  1  1  1  0  0  0  0  0  1  1  1  0  …  0  0  0  0  1  1  1  0  0  0
 0  1
 1  1  1  1  0  0  0  1  0  1  1  1  1     1  1  0  1  1  0  1  0  1  0
 0  1
```

In [30]:
```
FreqCh4 = mean(Ch4,1)
```

Out[30]:
```
1x34976 Array{Float64,2}:
 0.728155  1.0  0.958391  0.999307  …  0.0  0.218447  0.0  0.0  1.0
```

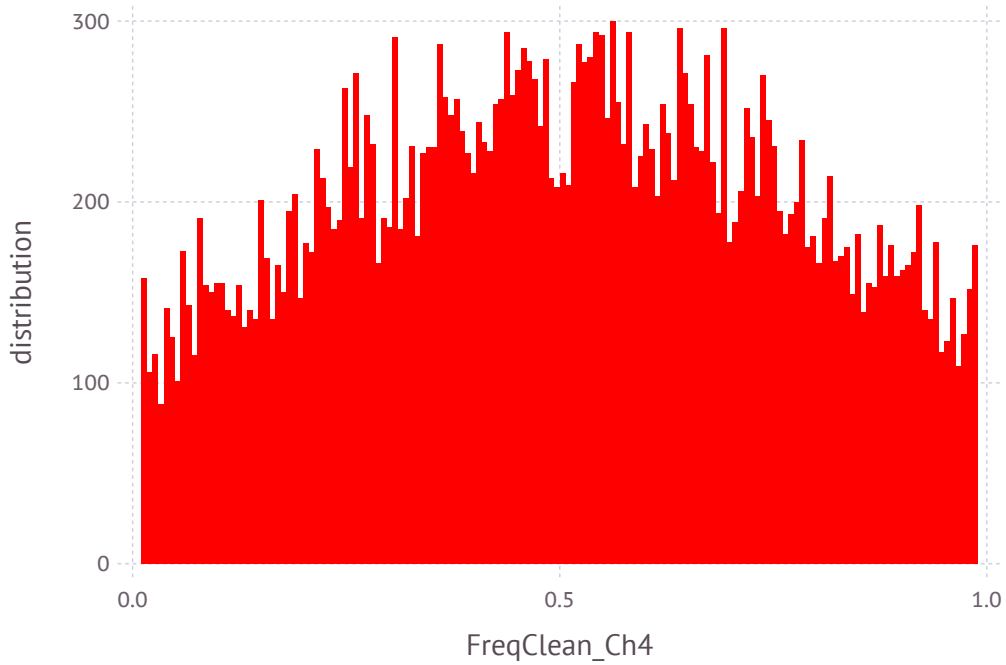
In [31]:
```
CleanCh4 = Ch4[:, 0.01 .< FreqCh4 .< 0.99];
```

In [32]:
```
FreqCleanCh4 = mean(CleanCh4,1)
```

Out[32]:
```
1x30473 Array{Float64,2}:
 0.728155  0.958391  0.0984743  0.09362  …  0.669903  0.979889  0.218447
```

In [33]:
```
plot(x=FreqCleanCh4, Geom.histogram, Guide.XLabel("FreqClean_Ch4"), Guide.YLa
```

Out[33]:



In [34]:
```
Ch4stream = open("ch4/CleanCh4.txt", "w")
```

Out[34]:
```
IOStream(<file ch4/CleanCh4.txt>)
```

In [35]:
```
for i in 1:size(CleanCh4,1)
    for j in 1:size(CleanCh4,2)
        @printf(Ch4stream , "%2d", CleanCh4[i,j])
    end
    @printf(Ch4stream , "\n")
end
```

In [36]:
```
close(Ch4stream )
```

Ch5

In [37]:
```
Ch5 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch5/ch5.Hap
```

Out[37]:
```
1442x34840 Array{Int64,2}:
 1  0  0  0  0  0  1  1  0  1  1  1  1  …  1  0  0  0  0  1  0  0  1  1
 0  1
 1  0  0  0  0  1  0  0  0  1  1  1  1     1  1  0  0  0  0  0  0  1  1
 0  1
 1  0  0  0  0  1  0  0  0  1  1  1  1     1  0  0  0  0  0  0  0  1  1
 0  1
 1  0  0  0  0  1  1  0  0  1  1  1  1     1  1  0  0  0  1  0  0  1  1
 0  1
 1  0  0  0  0  0  1  0  0  1  1  1  1     1  0  0  0  0  0  0  0  1  0
 1  1
 1  0  0  0  0  1  1  0  0  1  0  1  1  …  1  0  0  0  0  0  0  0  1  1
 0  1
 1  0  0  0  0  1  0  0  0  1  1  1  1     1  0  0  0  0  0  0  0  1  0
 0  1
 1  0  1  1  1  1  0  1  1  1  1  1  1     1  1  0  0  0  0  0  0  1  1
 0  1
 1  0  0  0  0  0  1  0  0  1  1  1  1     1  1  0  0  0  1  0  0  1  1
 0  1
 1  0  1  1  1  1  0  1  1  1  1  1  1     1  0  0  0  0  0  0  0  1  1
 0  1
 1  0  0  0  0  0  1  0  0  1  0  1  1  …  1  0  0  0  0  0  0  0  1  1
 0  1
 1  0  0  0  0  0  1  0  0  1  1  1  1     1  0  0  0  0  0  0  0  1  1
 0  1
 1  0  0  0  0  0  1  0  0  1  1  1  1     1  1  0  0  0  1  0  0  1  1
 0  1
 ⋮                 ⋮                 ⋮           ⋱          ⋮                 ⋮

 1  0  0  0  0  1  1  0  0  1  1  1  1  …  1  1  0  0  0  1  0  0  1  1
 0  1
 1  0  0  0  0  1  1  1  0  1  1  1  1     1  0  0  0  0  0  0  0  1  0
 0  1
 1  0  0  0  0  1  1  0  0  1  1  1  1     1  0  0  0  0  0  0  0  1  0
 1  1
 1  0  0  0  0  1  1  1  0  1  0  1  1     1  0  0  0  0  0  0  0  1  0
 0  1
 1  0  0  0  0  0  1  0  0  1  1  1  1     1  1  0  0  1  0  0  1  1  1
 0  1
 1  0  0  0  0  0  1  1  0  1  1  1  1  …  1  1  0  0  1  0  0  1  1  1
 0  1
 1  0  0  0  0  0  1  1  0  1  1  1  1     1  0  0  0  0  1  0  0  1  1
 0  1
 1  0  0  0  0  1  1  0  0  1  1  1  1     1  1  0  0  0  1  0  0  1  1
 0  1
 1  0  0  0  0  0  1  0  0  1  1  1  1     1  1  0  0  0  1  0  0  1  1
 0  1
 1  0  0  0  0  0  1  1  0  1  1  1  1     1  1  1  1  1  1  1  1  1  0
 1  0
 1  0  0  0  0  0  1  1  0  1  0  1  1  …  1  0  0  0  0  0  0  0  1  0
 1  1
 1  0  0  0  0  1  1  0  0  1  1  1  1     1  1  0  0  0  1  0  0  1  1
 0  1
```

In [38]:
```
FreqCh5 = mean(Ch5,1)
```

Out[38]:
```
1x34840 Array{Float64,2}:
 1.0  0.000693481  0.279473  0.162968  …  0.841193  0.151872  0.995839
```

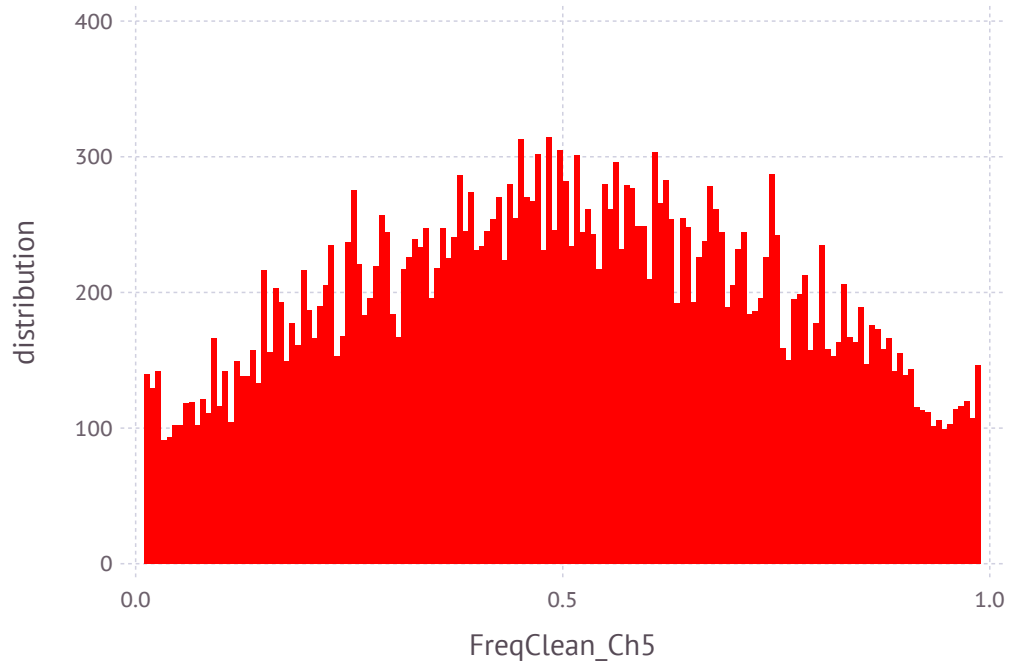
In [39]:
```
CleanCh5 = Ch5[:, 0.01 .< FreqCh5 .< 0.99];
```

In [40]:
```
FreqCleanCh5 = mean(CleanCh5,1)
```

Out[40]:
```
1x29888 Array{Float64,2}:
 0.279473  0.162968  0.163662  0.498613  …  0.0277393  0.841193  0.151872
```

In [41]:
```
plot(x=FreqCleanCh5, Geom.histogram, Guide.XLabel("FreqClean_Ch5"), Guide.YLa
```

Out[41]:



In [42]:
```
Ch5stream = open("ch5/CleanCh5.txt", "w")
```

Out[42]:
```
IOStream(<file ch5/CleanCh5.txt>)
```

In [43]:
```
for i in 1:size(CleanCh5,1)
    for j in 1:size(CleanCh5,2)
        @printf(Ch5stream , "%2d", CleanCh5[i,j])
    end
    @printf(Ch5stream , "\n")
end
```

In [44]:
```
close(Ch5stream )
```

Ch6

In [45]:
```
Ch6 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch6/ch6.Hap
```

Out[45]:
```
1442x35516 Array{Int64,2}:
 0  1  1  1  1  1  0  1  1  0  1  0  1  …  1  1  1  0  1  1  1  1  1  0
 1  1
 0  1  1  1  1  1  0  1  1  1  0  1  1     0  0  0  1  0  1  1  0  1  0
 1  0
 0  1  1  1  1  1  0  1  1  1  0  1  1     1  1  1  0  1  1  1  1  1  0
 1  0
 1  0  0  0  0  1  1  1  0  1  0  1  0     1  1  1  0  1  1  1  1  1  0
 1  0
 0  1  1  1  1  1  0  1  1  1  0  1  1     0  0  0  1  0  1  1  0  1  0
 1  1
 0  1  1  1  1  1  0  1  1  1  0  1  1  …  1  1  1  0  1  1  1  1  1  0
 1  0
 0  1  1  1  1  1  0  1  1  1  0  1  1     1  1  1  0  1  1  1  1  1  0
 1  1
 0  1  1  1  1  1  0  1  1  1  0  1  1     0  0  0  1  0  0  0  0  0  0
 0  0
 0  1  1  1  1  1  0  1  1  0  1  0  1     0  0  0  1  0  1  1  0  1  0
 1  1
 1  0  0  0  0  1  1  1  0  1  0  1  0     0  0  0  1  0  1  1  0  1  0
 1  0
 0  1  1  1  1  1  0  1  1  0  1  0  1  …  1  1  1  0  1  1  1  1  1  0
 1  0
 0  1  1  1  1  1  0  1  1  1  0  1  1     0  0  0  1  0  0  0  0  0  0
 0  0
 0  1  1  1  1  1  0  1  1  0  1  0  1     0  1  1  0  1  1  1  1  0  0
 1  0
 ⋮                 ⋮                 ⋮          ⋱       ⋮                 ⋮
  ⋮
 0  0  0  0  0  1  1  1  0  1  0  1  0  …  0  0  0  1  0  0  0  0  0  0
 0  0
 1  0  0  1  0  1  0  0  1  0  1  1  1     1  1  1  0  1  1  1  1  1  0
 1  0
 0  1  1  1  1  1  0  1  1  1  0  1  1     1  1  1  0  1  1  1  1  1  0
 1  0
 1  0  0  0  0  1  1  1  0  1  0  1  0     0  1  1  0  1  1  1  1  0  0
 1  0
 0  1  1  1  1  1  0  1  1  0  1  0  1     0  0  0  1  0  0  0  0  0  0
 0  0
 1  0  0  0  0  1  1  1  0  1  0  1  0  …  1  1  1  0  1  1  1  1  1  0
 1  1
 0  1  1  1  1  1  0  1  1  1  0  1  1     0  0  0  1  0  0  0  0  0  0
 0  0
 1  0  0  1  0  1  0  0  1  0  1  1  1     1  1  1  0  1  1  1  1  1  0
 1  0
 0  1  1  1  1  1  0  1  1  0  1  0  1     0  0  0  1  0  0  0  0  0  0
 0  0
 0  1  1  1  1  1  0  1  1  0  1  0  1     0  1  1  0  1  1  1  1  0  0
 1  0
 0  0  0  0  0  1  1  1  0  1  0  1  0  …  0  0  0  1  0  1  1  0  1  0
 1  0
 1  0  0  0  0  1  1  1  0  1  0  1  0     1  1  1  0  1  1  1  1  1  0
 1  0
```

In [46]:
```
FreqCh6 = mean(Ch6,1)
```

Out[46]:
```
1x35516 Array{Float64,2}:
 0.400139  0.463245  0.460472  0.547157  …  0.000693481  0.898752  0.1900
14
```

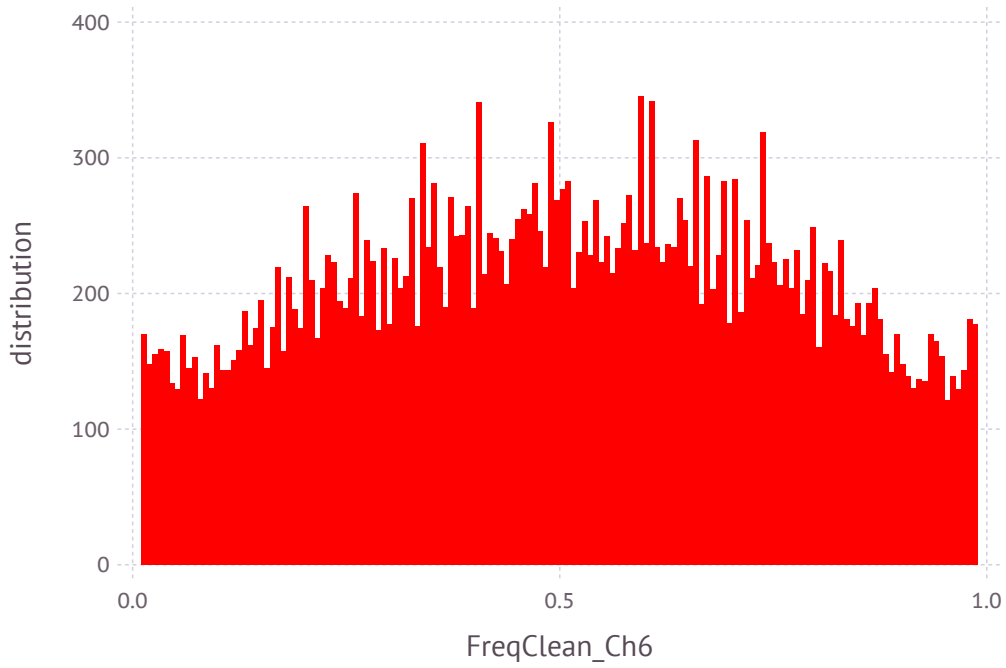
In [47]:
```
CleanCh6 = Ch6[:, 0.01 .< FreqCh6 .< 0.99];
```

In [48]:
```
FreqCleanCh6 = mean(CleanCh6,1)
```

Out[48]:
```
1x31407 Array{Float64,2}:
 0.400139  0.463245  0.460472  0.547157  …  0.690014  0.898752  0.190014
```

In [49]:
```
plot(x=FreqCleanCh6, Geom.histogram, Guide.XLabel("FreqClean_Ch6"), Guide.YLa
```

Out[49]:



In [50]:
```
Ch6stream = open("ch6/CleanCh6.txt", "w")
```

Out[50]:
```
IOStream(<file ch6/CleanCh6.txt>)
```

In [51]:
```
for i in 1:size(CleanCh6,1)
    for j in 1:size(CleanCh6,2)
        @printf(Ch6stream , "%2d", CleanCh6[i,j])
    end
    @printf(Ch6stream , "\n")
end
```

In [52]:
```
close(Ch6stream )
```

Ch7

In [53]:
```
Ch7 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch7/ch7.Hap
```

Out[53]:
```
1442x33166 Array{Int64,2}:
 0  0  1  0  0  1  1  1  1  1  0  1  1  …  1  1  1  1  1  0  0  0  1  0
 1  1
 0  0  1  0  0  1  1  1  1  1  0  1  1     1  1  1  1  1  0  0  0  1  0
 1  1
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  0  0  0  1  1  1  0  0  0
 1  0
 1  0  0  0  0  1  0  1  1  1  0  1  0     1  1  1  1  1  0  0  0  1  0
 1  1
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  1  1  0  1  0  0  0  0  0
 1  0
 0  1  1  1  1  0  1  1  0  0  0  0  1  …  0  1  0  0  1  1  1  0  0  0
 1  1
 0  0  1  0  0  1  1  1  1  1  0  1  1     1  1  1  1  1  0  0  0  1  0
 1  1
 0  0  1  0  0  1  1  1  1  1  0  1  1     1  1  1  1  1  0  0  0  1  0
 1  1
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  1  1  0  1  0  0  0  0  0
 1  0
 0  1  1  1  1  0  1  1  0  0  0  0  1     0  1  1  0  1  0  0  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1  …  0  1  1  0  1  0  0  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  0  0  0  1  1  1  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  1  1  0  1  0  0  0  0  0
 1  0
 ⋮                 ⋮                 ⋮          ⋱       ⋮                 ⋮
  ⋮
 0  0  1  0  0  1  1  1  1  1  0  1  1  …  0  1  1  0  1  0  0  0  0  0
 1  0
 1  0  0  0  0  1  0  1  1  1  0  1  0     0  0  0  0  1  1  1  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  0  0  0  1  1  1  0  0  0
 1  0
 0  0  1  1  0  0  1  1  0  0  0  1  1     0  0  0  0  1  1  1  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  1  1  0  1  0  0  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1  …  0  1  1  0  1  0  1  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  1  1  0  1  0  1  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  1  1  0  1  0  0  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  0  0  0  1  1  1  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1     0  0  0  0  1  1  1  0  0  0
 1  0
 0  0  1  0  0  1  1  1  1  1  0  1  1  …  1  1  1  1  1  0  0  0  1  0
 1  1
 1  0  0  0  0  1  0  1  1  1  0  1  0     1  1  1  1  1  0  0  0  1  0
 1  1
```

In [54]:
```
FreqCh7 = mean(Ch7,1)
```

Out[54]:
```
1x33166 Array{Float64,2}:
 0.282247  0.184466  0.717753  0.244105  …  0.0  0.242025  0.0  1.0  0.24
896
```

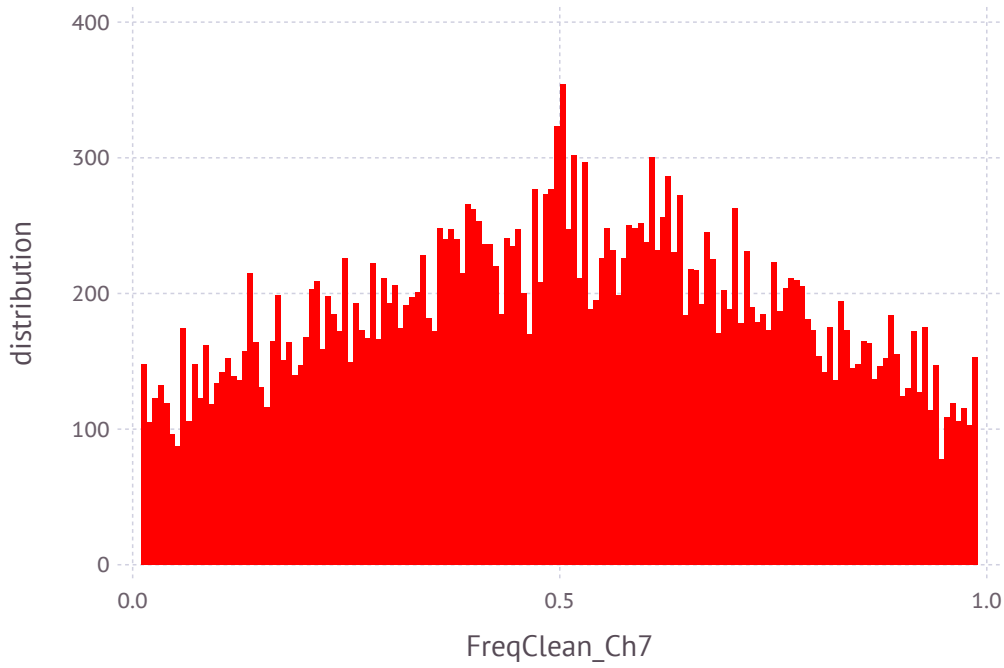
In [55]:
```
CleanCh7 = Ch7[:, 0.01 .< FreqCh7 .< 0.99];
```

In [56]:
```
FreqCleanCh7 = mean(CleanCh7,1)
```

Out[56]:
```
1x28402 Array{Float64,2}:
 0.282247  0.184466  0.717753  0.244105  …  0.434813  0.242025  0.24896
```

In [57]:
```
plot(x=FreqCleanCh7, Geom.histogram, Guide.XLabel("FreqClean_Ch7"), Guide.YLa
```

Out[57]:



In [58]:
```
Ch7stream = open("ch7/CleanCh7.txt", "w")
```

Out[58]:
```
IOStream(<file ch7/CleanCh7.txt>)
```

In [59]:
```
for i in 1:size(CleanCh7,1)
    for j in 1:size(CleanCh7,2)
        @printf(Ch7stream , "%2d", CleanCh7[i,j])
    end
    @printf(Ch7stream , "\n")
end
```

In [60]:
```
close(Ch7stream )
```

Ch8

In [61]:
```
Ch8 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch8/ch8.Hap
```

Out[61]:
```
1442x33526 Array{Int64,2}:
 1  0  0  0  0  1  0  0  0  0  1  1  1  …  1  0  1  0  1  1  0  1  1  1
 1  0
 1  0  0  0  1  1  0  0  0  0  1  1  0     0  0  0  1  1  1  0  1  0  0
 0  1
 0  0  0  1  1  0  0  0  0  0  1  0  1     1  0  0  0  0  1  0  1  1  0
 0  0
 1  0  0  0  0  1  0  0  0  0  1  1  0     1  1  1  0  1  1  0  1  1  1
 1  0
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  0  0  0  0  1  0  1  1  0
 0  1
 1  0  0  0  1  1  0  0  0  0  1  1  0  …  1  1  1  0  1  0  1  1  1  0
 0  0
 1  0  0  0  0  1  0  0  0  0  1  1  1     0  0  0  1  1  1  0  1  0  0
 0  1
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  0  1  0  1  1  0  1  1  1
 1  0
 0  0  0  1  1  1  0  0  0  0  1  1  1     1  0  1  0  1  1  0  1  1  1
 1  1
 1  0  0  0  0  1  0  0  0  0  1  1  0     1  1  0  1  1  1  0  1  0  0
 1  1
 0  0  0  1  1  0  0  0  0  0  1  0  1  …  1  1  0  0  0  1  0  1  1  0
 0  1
 1  0  0  0  1  1  0  0  0  0  1  1  0     1  0  1  0  1  0  1  0  1  1
 1  1
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  1  0  0  1  1  0  1  1  0
 0  1
 ⋮                 ⋮                 ⋮          ⋱       ⋮                 ⋮
  ⋮
 1  0  0  0  0  1  0  0  0  0  1  1  1  …  1  1  0  1  1  0  1  1  1  0
 0  1
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  1  0  0  1  1  0  1  1  0
 0  1
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  1  0  1  1  1  0  1  1  0
 0  1
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  0  0  0  1  1  0  1  1  0
 0  0
 0  0  0  1  1  0  0  0  0  0  1  1  1     1  0  0  0  0  1  0  1  1  0
 0  1
 1  0  0  0  0  1  0  0  0  0  1  1  1  …  1  0  0  0  1  1  0  1  1  0
 0  0
 1  0  0  0  0  1  0  0  0  0  1  1  0     1  1  0  1  1  0  1  1  1  0
 0  1
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  0  1  0  1  1  0  1  1  1
 1  0
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  1  0  1  1  0  1  1  1  0
 0  1
 1  0  0  0  1  1  0  0  0  0  1  1  0     1  0  0  0  0  1  0  1  1  0
 0  1
 0  0  0  1  1  0  0  0  0  0  1  0  1  …  1  1  0  0  0  0  1  1  1  1
 1  1
 1  0  0  0  0  1  0  0  0  0  1  1  1     1  1  0  0  1  1  0  1  1  0
 0  1
```

In [62]:
```
FreqCh8 = mean(Ch8,1)
```

Out[62]:
```
1x33526 Array{Float64,2}:
 0.677531  0.0  0.000693481  0.323162  …  0.241331  0.361304  0.773232
```

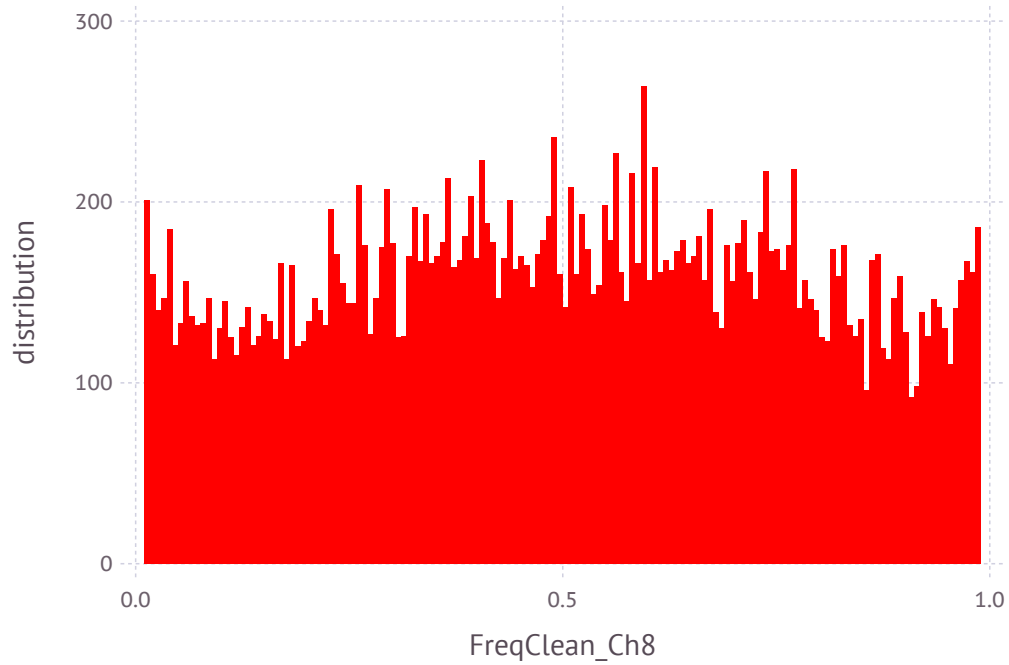
In [63]:
```
CleanCh8 = Ch8[:, 0.01 .< FreqCh8 .< 0.99];
```

In [64]:
```
FreqCleanCh8 = mean(CleanCh8,1)
```

Out[64]:
```
1x23922 Array{Float64,2}:
 0.677531  0.323162  0.383495  0.683773  …  0.241331  0.361304  0.773232
```

In [65]:
```
plot(x=FreqCleanCh8, Geom.histogram, Guide.XLabel("FreqClean_Ch8"), Guide.YLa
```

Out[65]:



In [66]:
```
Ch8stream = open("ch8/CleanCh8.txt", "w")
```

Out[66]:
```
IOStream(<file ch8/CleanCh8.txt>)
```

In [67]:
```
for i in 1:size(CleanCh8,1)
    for j in 1:size(CleanCh8,2)
        @printf(Ch8stream , "%2d", CleanCh8[i,j])
    end
    @printf(Ch8stream , "\n")
end
```

In [68]:
```
close(Ch8stream )
```

Ch9

In [69]:
```
Ch9 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch9/ch9.Hap
```

Out[69]:
```
1442x31056 Array{Int64,2}:
 0  0  1  0  0  0  0  0  1  1  1  1  1  …  1  0  0  1  1  0  1  1  1  1
 0  0
 1  1  1  0  0  0  0  0  1  0  1  0  1     1  0  0  1  1  0  1  1  1  1
 1  0
 0  0  1  0  0  0  1  0  1  0  1  0  1     1  0  0  1  1  0  1  1  1  1
 1  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     1  0  0  1  1  0  1  1  1  1
 1  0
 0  0  1  0  0  0  0  0  1  1  1  1  1     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0  …  0  0  1  0  0  1  1  0  0  1
 0  0
 0  0  1  0  0  0  1  0  1  0  1  0  1     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
 0  0  1  0  0  0  0  0  1  0  0  0  1     1  0  0  1  1  0  1  1  1  1
 1  0
 0  0  1  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0  …  1  0  0  1  1  0  1  1  1  1
 1  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  1
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
 ⋮                 ⋮                 ⋮          ⋱       ⋮                 ⋮
  ⋮
 0  0  1  0  0  0  1  0  1  0  1  0  1  …  0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  1
 0  0
 0  1  1  0  0  0  0  0  1  0  1  0  1     1  0  0  1  1  0  1  1  1  1
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  1  0  0  0  0  0  1  0  0  0  1  …  1  0  0  1  1  0  1  1  1  1
 0  0
 0  1  1  0  0  0  0  0  1  0  0  0  1     0  0  1  0  0  1  1  0  0  1
 0  0
 0  1  1  0  0  0  0  0  1  0  1  0  1     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  0  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  0  0  1  0  1  0  …  0  1  1  0  0  1  1  0  0  0
 0  0
 0  1  0  0  0  0  1  1  0  1  0  1  0     0  1  1  0  0  1  1  0  0  0
 0  0
```

In [70]:
```
FreqCh9 = mean(Ch9,1)
```

Out[70]:
```
1x31056 Array{Float64,2}:
 0.00277393  0.665049  0.400832  0.0  …  0.147712  0.284327  0.12344  0.0
```

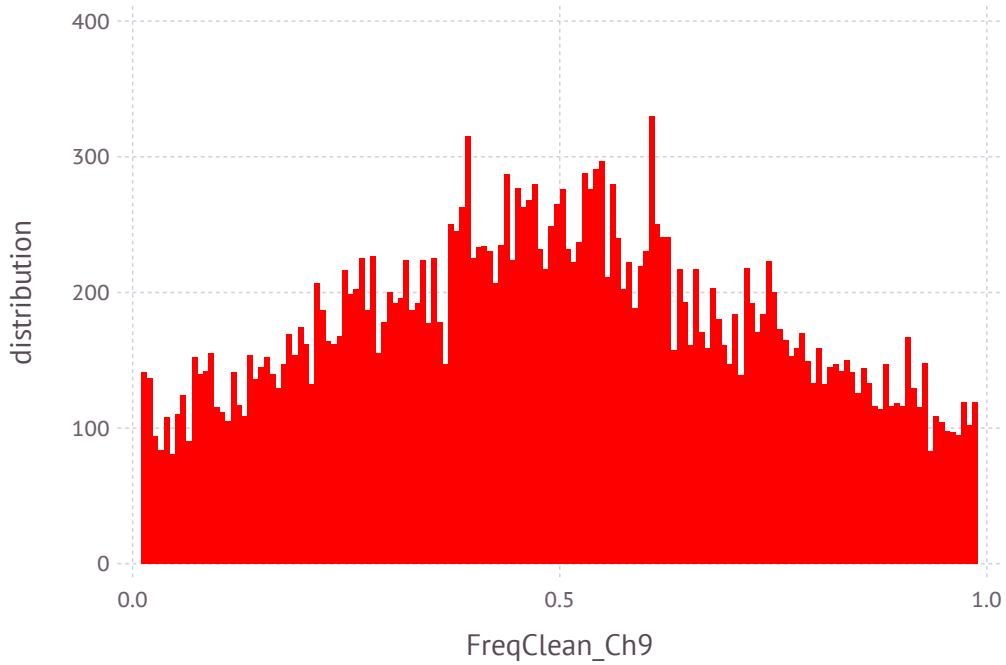
In [71]:
```
CleanCh9 = Ch9[:, 0.01 .< FreqCh9 .< 0.99];
```

In [72]:
```
FreqCleanCh9 = mean(CleanCh9,1)
```

Out[72]:
```
1x26852 Array{Float64,2}:
 0.665049  0.400832  0.746879  0.542996  …  0.147712  0.284327  0.12344
```

In [73]:
```
plot(x=FreqCleanCh9, Geom.histogram, Guide.XLabel("FreqClean_Ch9"), Guide.YLa
```

Out[73]:



In [74]:
```
Ch9stream = open("ch9/CleanCh9.txt", "w")
```

Out[74]:
```
IOStream(<file ch9/CleanCh9.txt>)
```

In [75]:
```
for i in 1:size(CleanCh9,1)
    for j in 1:size(CleanCh9,2)
        @printf(Ch9stream , "%2d", CleanCh9[i,j])
    end
    @printf(Ch9stream , "\n")
end
```

In [76]:
```
close(Ch9stream )
```

Ch10

In [77]:
```
Ch10 = convert(Array,readtable("/home/nicole/Jupyter/HERdata/data/ch10/ch10.
```

Out[77]:
```
1442x30449 Array{Int64,2}:
 1  1  0  1  0  0  1  1  0  1  0  1  1  …  0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  1  0  1  1  0  1  0  1  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0  …  0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  1  1  1  0  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  1  0  1  1  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0  …  0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  1  0  1  1  0  1  0  1  1
 1  0
 ⋮              ⋮              ⋮          ⋱          ⋮              ⋮

 1  1  1  1  0  0  1  1  1  1  0  0  0  …  0  1  0  1  1  0  1  0  1  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0  …  0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  1  0  1  1  0  1  0  1  1
 1  0
 1  1  0  1  0  0  1  1  0  1  0  1  1     0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  1  0  1  1  0  0  0  0  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0  …  0  0  1  0  0  0  1  0  1  1
 1  0
 1  1  1  1  0  0  1  1  1  1  0  0  0     0  0  1  0  0  0  1  0  1  1
 1  0
```

In [78]:
```
FreqCh10 = mean(Ch10,1)
```

Out[78]:
```
1x30449 Array{Float64,2}:
 1.0  1.0  0.57975  1.0  0.0  0.0  1.0  1.0  …  0.999307  0.999307  0.020
8044
```

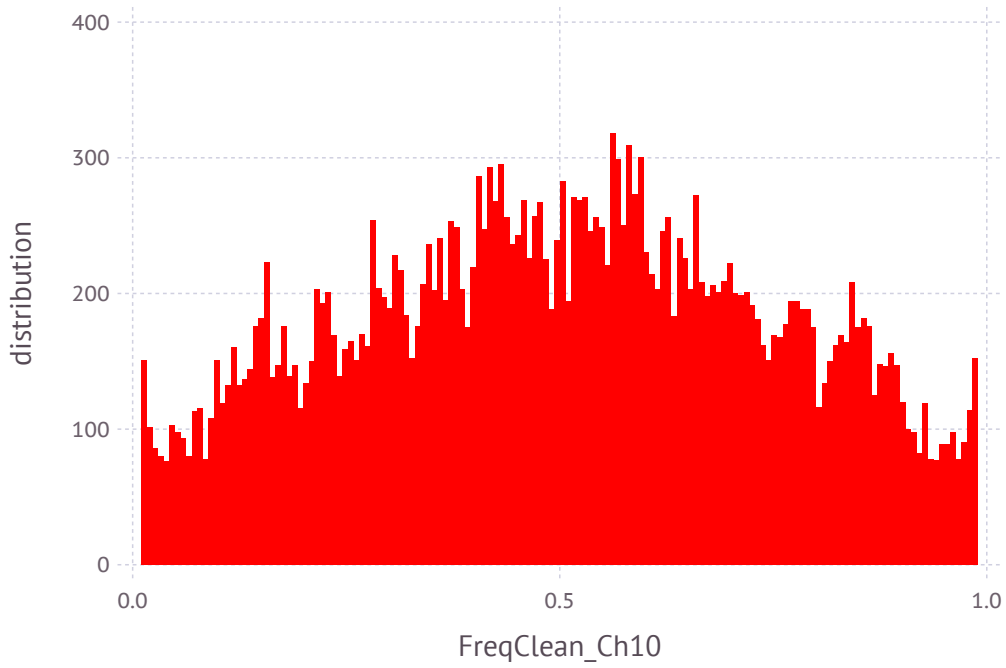
In [79]:
```
CleanCh10 = Ch10[:, 0.01 .< FreqCh10 .< 0.99];
```

In [80]:
```
FreqCleanCh10 = mean(CleanCh10,1)
```

Out[80]:
```
1x27478 Array{Float64,2}:
 0.57975  0.571429  0.432039  0.432039  …  0.668516  0.668516  0.0208044
```

In [81]:
```
plot(x=FreqCleanCh10, Geom.histogram, Guide.XLabel("FreqClean_Ch10"), Guide.
```

Out[81]:



In [82]:
```
Ch10stream = open("ch10/CleanCh10.txt", "w")
```

Out[82]:
```
IOStream(<file ch10/CleanCh10.txt>)
```

In [83]:
```
for i in 1:size(CleanCh10,1)
    for j in 1:size(CleanCh10,2)
        @printf(Ch10stream , "%2d", CleanCh10[i,j])
    end
    @printf(Ch10stream , "\n")
end
```

In [84]:
```
close(Ch10stream )
```