Position Specific Scoring Matrices

	W	E	I	R	D
	W	E	I	R	D
	W	E	I	R	E
	W	E	I	Q	H

	D	0	0	0	0	2	1
	E	0	4	0	0	1	2
	H	0	0	0	0	1	1
	I	0	0	4	0	0	1
	Q	0	0	0	1	0	1
	R	0	0	0	3	0	1
	W	4	0	0	0	0	1
	k	4	4	4	4	4	

F[i,j]

D					0.50	
E		1.00			0.25	
H					0.25	
I			1.00			
Q				0.25		
R				0.75		
W	1.00					
SUM	1.0	1.0	1.0	1.0	1.0	

$$F[i, j] = \frac{n_i}{k}$$

P[i,j]

D					9.6	
E		16.1			4.0	
H					10.9	
I			18.9			
Q				6.1		
R				14.7		
W	71.4					

Background	
D	0.052
E	0.062
H	0.023
I	0.053
Q	0.041
R	0.051
W	0.014

$$P[i, j] = \frac{F[i, j]}{b_i}$$

Note: this is a likelihood ratio

S[i,j]

D					3.3	
E		4.0			2.0	
H					3.4	
I			4.2			
Q				2.6		
R				3.9		
W	6.2					

Background	
D	0.052
E	0.062
H	0.023
I	0.053
Q	0.041
R	0.051
W	0.014

$$S[i, j] = \log_2 P[i, j]$$

This is a log likelihood ratio

Scoring:

	W	I	W	E	I	R	H
SUM	6.2						
6.2	6.2						
0.0							
21.7			6.2	4.0	4.2	3.9	3.4