

# Resource Summary Report

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## Edwards Lab

RRID:SCR\_008860

Type: Tool

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### Proper Citation

Edwards Lab (RRID:SCR\_008860)

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### Resource Information

**URL:** <http://edwardslab.bmcb.georgetown.edu/>

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**Description:** The Edwards lab conducts research in various aspects of computational biology and bioinformatics, particularly proteomics and mass spectrometry informatics and DNA and protein based signatures for pathogen detection. Some tools provided by Edwards Lab are the PepArML Meta-Search Engine, PeptideMapper Web-Service, Peptide Sequence Databases, Rapid Microorganism Identification Database (RMIDb), and GlycoPeptideSearch. Our primary area of research is the analysis of mass spectrometry experiments for proteomics. Proteomics, the qualitative and quantitative analysis of the expressed proteins of a cell, makes it possible to detect and compare the protein abundance profiles of different samples. Proteins observed to be under or over expressed in disease samples can lead to diagnostic markers or drug targets. The observation of mutated or alternatively spliced protein isoforms may provide domain experts with clues to the mechanisms by which a disease operates. The detection of proteins by mass spectrometry can even signal the presence of airborne microorganisms, such as anthrax, in the detect-to-protect time-frame. Recent research has focused on the discovery of novel peptides in proteomics datasets, improving the sensitivity and specificity of peptide identification using spectral matching with hidden Markov models, and unsupervised machine-learning based peptide identification result combining. Outside of proteomics, we work on computational tools for the design of highly specific oligonucleotides useful for pathogen signatures and PCR assay design. Recent research has focused on precomputing all human oligos of length 20 that are unique up to 4 string edits; and all bacterial 20-mer oligos that are species specific up to 4 string edits.

**Abbreviations:** Edwards Lab

**Synonyms:** Georgetown - Edwards Lab, Georgetown University - Edwards Lab, GU -

Edwards Lab

**Resource Type:** topical portal, organization portal, data or information resource, laboratory portal, portal

**Keywords:** peptide, proteomics, computational biology, bioinformatics, mass spectrometry, informatics, oligonucleotide, peptide sequence

**Funding:**

**Resource Name:** Edwards Lab

**Resource ID:** SCR\_008860

**Alternate IDs:** nlx\_149188

**Record Creation Time:** 20220129T080249+0000

**Record Last Update:** 20250417T065339+0000

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## Ratings and Alerts

No rating or validation information has been found for Edwards Lab.

No alerts have been found for Edwards Lab.

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## Data and Source Information

**Source:** [SciCrunch Registry](#)

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## Usage and Citation Metrics

We found 1 mentions in open access literature.

**Listed below are recent publications.** The full list is available at [NIF](#).

Ning K, et al. (2010) The utility of mass spectrometry-based proteomic data for validation of novel alternative splice forms reconstructed from RNA-Seq data: a preliminary assessment. BMC bioinformatics, 11 Suppl 11(Suppl 11), S14.