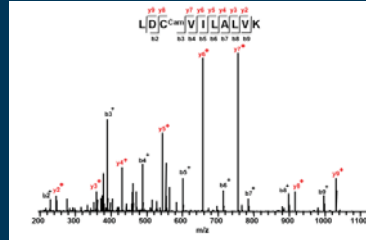
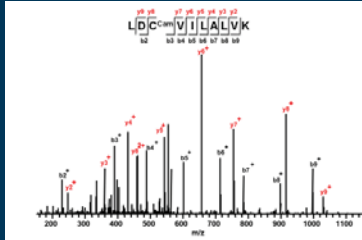


Research Highlights

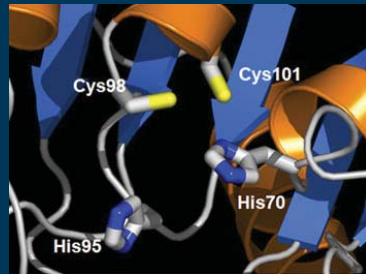
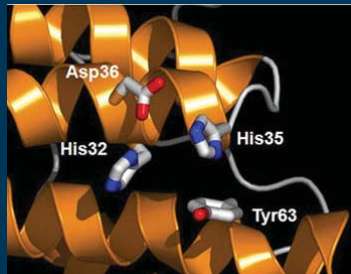
Endogenous protein S-nitrosylation in *E. coli*: regulation by OxyR.

Seth, D., Hausladen, A., Wang, Y.J., Stamler, J.S. *Science* 2012.

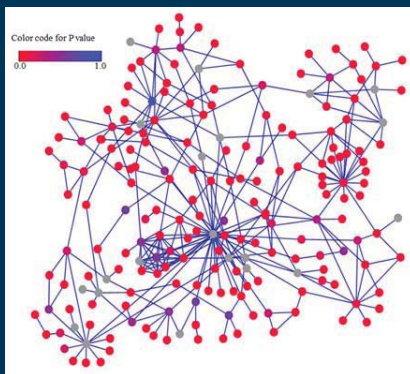


Characterization of metalloproteins by high-throughput X-ray absorption spectroscopy

Shi, W., Punta, M., Bohon, J., Sauder, J.M., D.Mello, R., Sullivan, M., Toomey, J., Abel, D., Lippi, M., Passerini, A., Frasconi, P., Burley, S.K., Rost, B., Chance, M.R. *Genome Research*, 21(6):898-907, 2011. PMID: PMC3106322



Systems biology analyses of gene expression and genome wide association study data in obstructive sleep apnea



Liu, Y., Patel, S., Nibbe, R., Maxwell, S., Chowdhury, S.A., Koyutürk, M., Zhu, X., Larkin, E.K., Buxbaum, S.G., Punjabi, N.M., Gharib, S.A., Redline, S., Chance, M.R. *Pacific Symposium on Biocomputing* 14-25, 2011.

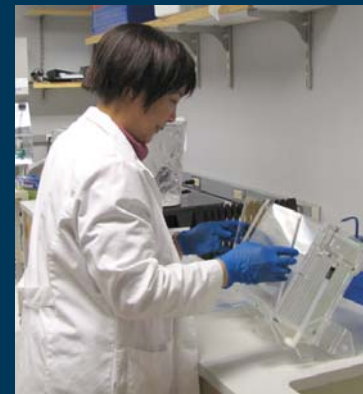
Center for Proteomics and Bioinformatics

...understanding cellular functions and disease associations of proteins



The Center supports interdisciplinary collaborative research in a variety of biological contexts including:

- protein and gene expression analysis
- protein modifications and interactions
- protein structure and bioinformatics analysis as applied to clinical, translational, and basic science research



About Us

The Center for Proteomics and Bioinformatics occupies over 9,000 sq. feet of laboratory space on the 9th floor of the Biomedical Research Building. Plans are currently underway for two additional high resolution, state of the art MS instruments that will be located on the first floor of the Wood building. This space will also have an area dedicated for Bioinformatics analysis.

The Center has:

- 14 primary faculty and 12 secondary faculty from the departments of: Dermatology, EECS, Genetics, Medicine, Nutrition, Pharmacology, Physiology & Biophysics, and the Case Comprehensive Cancer Center.
- Grown an initial investment of \$15 million from the School of Medicine into \$80 million in funded grants, of which \$25 million supports infectious disease research.
- Users from thirty-eight departments and centers at CWRU.
- Funded research cores from: the CTSC, CCCC and CFAR.

Since 2005, over one hundred institutions world-wide have utilized our technology. This research has resulted in over 1000 publications in high impact journals such as: *Blood*, *Nature Genetics*, *Nature Methods*, *Nature Structural Biology*, *PNAS*, and *Science*.

The Center for Proteomics and Bioinformatics leads the structural biology field and is considered a world class structural and systems biology center.

Center for Proteomics and Bioinformatics

Case Western Reserve University
10900 Euclid Ave., BRB 9th floor
Cleveland, OH 44106-4988

Email: proteomics@case.edu

Web: <http://proteomics.case.edu>

Phone: 216-368-1490

Fax: 216-368-6846

Research Cores and Services

Expression Proteomics

- 2D-DIGE
- Label Free Protein Expression
- Stable Isotope Labeling
- ¹⁸O Labeling

Post-Translational Modification Proteomics

- Phosphopeptide, Acetylation, Methylation, and Glycosylation Enrichment Strategies
- IP-pulldowns

Interaction Proteomics

- Affinity Purification MS

Bioinformatics and Biostatistics

- Pathway Analysis
- Mascot MS Search Engine
- SNP Analysis

Systems Medicine Data Analysis

- Sub-network Identification

Macromolecular Crystallography

- Crystallation & Structure Determination

X-Ray Spectroscopy

- Analysis of Metal Site Structure

X-Ray Footprinting

- Protein & DNA Structure Analysis

Instruments

- Dionex Ultimate 3000 RSLC nano LC interfaced to a Fourier Transform LTQ mass spectrometer equipped with a 7T superconductive magnet with ppm resolution for top-down and bottom-up proteomics.
- Waters nanoACQUITY UPLC interfaced to a LTQ Orbitrap XL mass spectrometer with ETD capabilities.
- Waters nanoACQUITY UPLC interfaced to a LTQ Orbitrap Velos mass spectrometer.
- Dionex Ultimate 3000 RSLC nano LC system interfaced to a Thermo TSQ Quantum Ultra mass spectrometer
- GE/Amersham 2-D gel DIGE system with robotic spot picking.
- Pro-TOF 2000 MALDI mass spectrometer, with attamole sensitivity and 5 ppm resolution.

Coming Spring 2012

2 Waters nanoACQUITY UPLC interfaced to Orbitrap Velos Elite mass spectrometers

Training sessions are available for researchers interested in becoming independent instrument users.

Pricing is available on our website:
<http://proteomics.case.edu/pricing.html>