

Robert N. Cole
Curriculum Vitae

January 31, 2014

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

2000-present Instructor, Department of Biological Chemistry, JHMI
 Director, Mass Spectrometry and Proteomic Facility, JHMI

Personal Data

Mass Spectrometry and Proteomics Facility
Johns Hopkins School of Medicine
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Education and Training

<u>Year</u>	<u>Degree</u>	<u>Certificate Institution</u>	<u>Discipline</u>
1980	BS	University of Massachusetts, Amherst	Zoology/Physiology
1983	MS	University of South Carolina, Columbia	Biology/Physiological Ecology
1992	PhD	Michigan State University, East Lansing	Physiology/Neuroscience
1997	Postdoc	University of Alabama at Birmingham	Glycobiology/Neuroscience
1998	Postdoc	Johns Hopkins School of Medicine	Glycobiology/Neuroscience

Professional Experience

<u>Dates</u>	<u>Position</u>	<u>Institution</u>
1998-2000	Research Associate	Department of Biological Chemistry, JHMI
2000-2012	Instructor	Department of Biological Chemistry, JHMI
2000-present	Director	Mass Spectrometry and Proteomic Facility, JHMI
2012-present	Assistant Professor	Department of Biological Chemistry, JHMI

RESEARCH ACTIVITIES

Publications

Peer-reviewed original research articles

1. **Cole RN** and Burggren WW
The contribution of respiratory papulae and tube feet to oxygen uptake in the sea star, Asterias forbesi (Desor).
Marine Biology Letters (1981) 2:279-87
(Cited by 5)
2. **Cole RN**, Morell RJ and Zipser B
Glial processes, identified through their glial-specific 130 kD surface glycoprotein, are juxtaposed to sites of neurogenesis in the leech germinal plate.
Glia (1989) 2:446-57 PMID2531725
(Cited by 18)
3. Bajt ML, **Cole RN** and Zipser B
The specificity of 130-kDa leech sensory afferent proteins is encoded by their carbohydrate epitopes.
Journal of Neurochemistry (1990) 55:2117-25 PMID1700074
(Cited by 29)
4. Zipser B and **Cole RN**
A mannose-specific recognition mediates the defasciculation of axons in the leech CNS.
Journal of Neuroscience (1991) 11:3471-80 PMID1658251
(Cited by 29)
5. **Cole RN** and Zipser B
Carbohydrate-binding proteins in the leech: I. Isolation and characterization of lactose-binding proteins.
Journal of Neurochemistry (1994a) 63:66-74 PMID8207447
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6. **Cole RN** and Zipser B
Carbohydrate-binding proteins in the leech: II. Lactose-binding protein LL35 is located to neuronal and muscle subsets and all epithelial cells.
Journal of Neurochemistry (1994b) 63:75-85 PMID8207448
(Cited by 9)
7. Zipser K, Erhardt M, Song J, **Cole RN** and Zipser B
Distribution of carbohydrate epitopes among disjoint subsets of leech sensory afferent neurons.
Journal of Neuroscience (1994) 14:4481-93 PMID7517997
(Cited by 30)
8. Heese-Peck A, **Cole RN**, Borkhsenius ON, Hart GW and Raikhel NV
Plant nuclear pore complex proteins are modified by novel oligosaccharides with terminal N-acetylglucosamine.
Plant Cell (1995) 7:1459-71 PMC160971
(Cited by 69)
9. Arnold CS, Johnson GV, **Cole RN**, Dong DL, Lee M and Hart GW
The microtubule-associated protein tau is extensively modified with O-linked N-acetylglucosamine.
Journal of Biological Chemistry (1996) 271:28741-4 PMID8910513
(Cited by 222)
10. Harris TK, **Cole RN**, Comer FI and Mildvan AS
Proton transfer in the mechanism of triosephosphate isomerase.

- Biochemistry (1998)** 37:16828-38 PMID9843453
(Cited by 54)
11. Acosta-Serrano A, **Cole RN**, Mehlert A, Lee MG, Ferguson MA and Englund PT
The procyclin repertoire of Trypanosoma brucei. Identification and structural characterization of the Glu-Pro-rich polypeptides.
Journal of Biological Chemistry (1999) 274:29763-71 PMID10514452
(Cited by 48)
 12. **Cole RN** and Hart GW
Glycosylation sites flank phosphorylation sites on synapsin I: O-linked N-acetylglucosamine residues are localized within domains mediating synapsin I interactions.
Journal of Neurochemistry (1999) 73:418-28 PMID10386995
(Cited by 98)
 13. Acosta-Serrano A, **Cole RN** and Englund PT
Killing of Trypanosoma brucei by concanavalin A: structural basis of resistance in glycosylation mutants.
Journal of Molecular Biology (2000) 304:633-44 PMID11099385
(Cited by 20)
 14. Cheng X, **Cole RN**, Zaia J and Hart GW
Alternative O-glycosylation/O-phosphorylation of the murine estrogen receptor beta.
Biochemistry (2000) 39:11609-20 PMID10995228
(Cited by 168)
 15. Baumgartner MR, Almashanu S, Suormala T, Obie C, **Cole RN**, Packman S, Baumgartner ER and Valle D
The molecular basis of human 3-methylcrotonyl-CoA carboxylase deficiency.
Journal of Clinical Investigation (2001) 107:495-504 PMC199271
(Cited by 72)
 16. **Cole RN** and Hart GW
Cytosolic O-glycosylation is abundant in nerve terminals.
Journal of Neurochemistry (2001) 79:1080-9 PMID11739622
(Cited by 101)
 17. Dinkova-Kostova AT, Holtzclaw WD, **Cole RN**, Itoh K, Wakabayashi N, Katoh Y, Yamamoto M and Talalay P
Direct evidence that sulfhydryl groups of Keap1 are the sensors regulating induction of phase 2 enzymes that protect against carcinogens and oxidants.
Proceedings of the National Academy of Sciences, USA (2002) 99:11908-013 129367
(Cited by 985)
 18. Starai VJ, Celic I, **Cole RN**, Boeke JD and Escalante-Semerena JC
Sir2-dependent activation of acetyl-CoA synthetase by deacetylation of active lysine.
Science (2002) 298:2390-2 PMID12493915
(Cited by 297)
 19. Wells L, Vosseller K, **Cole RN**, Cronshaw JM, Matunis MJ and Hart GW
Mapping sites of O-GlcNAc modification using affinity tags for serine and threonine post-translational modifications.
Molecular and Cellular Proteomics (2002) 1:791-804 PMID12438562
(Cited by 311)
 20. Akimoto Y, Comer FI, **Cole RN**, Kudo A, Kawakami H, Hirano H and Hart GW
Localization of the O-GlcNAc transferase and O-GlcNAc-modified proteins in rat cerebellar cortex.
Brain Research (2003) 966:194-205 PMID12618343
(Cited by 30)
 21. Gewinner C, Hart G, Zachara N, **Cole R**, Beisenherz-Huss C and Groner B

- The coactivator of transcription CREB-binding protein interacts preferentially with the glycosylated form of Stat5.*
Journal of Biological Chemistry (2004) 279:3563-72 PMID14597631
(Cited by 123)
22. Jiang DW, Werbovets KA, Varadhachary A, **Cole RN** and Englund PT
Purification and identification of a fatty acyl-CoA synthetase from Trypanosoma brucei.
Molecular and Biochemical Parasitology (2004) 135:149-52 PMID15287596
 (Cited by 4)
23. Zhou XW, Kafsack BF, **Cole RN**, Beckett P, Shen RF and Carruthers VB
The opportunistic pathogen Toxoplasma gondii deploys a diverse legion of invasion and survival proteins.
Journal of Biological Chemistry (2005) 280:34233-44 PMC1360232
 (Cited by 76)
24. Colquhoun DR, Schwab KJ, **Cole RN** and Halden RU
Detection of norovirus capsid protein in authentic standards and in stool extracts by matrix-assisted laser desorption ionization and nanospray mass spectrometry.
Applied Environmental Microbiology (2006) 72:2749-55 PMC1449043
 (Cited by 22)
25. McDonald T, Sheng S, Stanley B, Chen D, Ko Y, **Cole RN**, Pedersen P and Van Eyk JE
Expanding the Subproteome of the Inner Mitochondria Using Protein Separation Technologies: One- and Two-dimensional Liquid Chromatography and Two-dimensional Gel Electrophoresis.
Molecular and Cellular Proteomics (2006) 5:2392-411 PMID17000643
 (Cited by 96)
26. Yuan C, Guo Y, Ravi R, Przyklenk K, Shilkofski N, Diez R, **Cole RN** and Murphy AM
Myosin binding protein C is differentially phosphorylated upon myocardial stunning in canine and rat hearts-- evidence for novel phosphorylation sites.
Proteomics (2006) 6:4176-86 PMID16791825
 (Cited by 70)
27. Anderson TJ, Tchernyshyov I, Diez R, **Cole RN**, Geman D, Dang CV and Winslow RL
Discovering robust protein biomarkers for disease from relative expression reversals in 2-D DIGE data.
Proteomics (2007) 7:1197-207 PMID17366473
 (Cited by 23)
28. Donowitz M, Singh S, Salahuddin FF, Hogema BM, Chen Y, Gucek M, **Cole RN**, Zachos NC, Kovbasnjuk O, Lapierre LA, Broere N, Goldenring J, Dejonge H and Li X
Proteome of Murine Jejunal Brush Border Membrane Vesicles.
Journal of Proteome Research (2007) 6:4068-79 PMID17845021
 (Cited by 25)
29. Guo Y, Singleton PA, Rowshan A, Gucek M, **Cole RN**, Graham DR, Van Eyk JE and Garcia JG
Quantitative proteomic analysis of human endothelial cell membrane rafts: Evidence of MARCKS and MRP regulation in the sphingosine 1-phosphate-induced barrier enhancement.
Molecular and Cellular Proteomics (2007) 6:689-96 PMC(NIHMS475090)
 (Cited by 58)
30. Liu YV, Baek JH, Zhang H, Diez R, **Cole RN** and Semenza GL
RACK1 competes with HSP90 for binding to HIF-1alpha and is required for O(2)-independent and HSP90 inhibitor-induced degradation of HIF-1alpha.
Molecular Cell (2007a) 25:207-17 PMC2563152
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31. Liu YV, Hubbi ME, Pan F, McDonald KR, Mansharamani M, **Cole RN**, Liu JO and Semenza GL

- Calcineurin promotes HIF-1alpha expression by dephosphorylating RACK1 and blocking RACK1 dimerization.*
Journal of Biological Chemistry (2007b) 282:37064-73 PMID17965024
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32. Chaerkady R, Harsha HC, Nalli A, Gucek M, Vivekanandan P, Akhtar J, **Cole RN**, Simmers J, Schulick RD, Singh S, Torbenson M, Pandey A and Thuluvath PJ
A quantitative proteomic approach for identification of potential biomarkers in hepatocellular carcinoma.
Journal of Proteome Research (2008) 7:4289-98 PMID18715028
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33. Martin B, Brenneman R, Becker KG, Gucek M, **Cole RN** and Maudsley S
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PLoS ONE (2008) 3:e2750 PMC2453232
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34. Santhanam L, Gucek M, Brown TR, Mansharamani M, Ryoo S, Lemmon CA, Romer L, Shoukas AA, Berkowitz DE and **Cole RN**
Selective fluorescent labeling of S-nitrosothiols (S-FLOS): A novel method for studying S-nitrosation.
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35. Amanchy R, Zhong J, Hong R, Kim JH, Gucek M, **Cole RN**, Molina H and Pandey A
Identification of c-Src tyrosine kinase substrates in platelet-derived growth factor receptor signaling.
Molecular Oncology (2009) 3:439-50 PMC2783305
 (Cited by 31)
36. Colquhoun DR, Goldman LR, **Cole RN**, Gucek M, Mansharamani M, Witter FR, Apelberg BJ and Halden RU
Global screening of human cord blood proteomes for biomarkers of toxic exposure and effect.
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 (Cited by 19)
37. Fu Z, Wang M, Gucek M, Zhang J, Wu J, Jiang L, Monticone RE, Khazan B, Telljohann R, Mattison J, Sheng S, **Cole RN**, Spinetti G, Pintus G, Liu L, Kolodgie FD, Virmani R, Spurgeon H, Ingram DK, Everett AD, Lakatta EG and Van Eyk JE
Milk fat globule protein epidermal growth factor-8: a pivotal relay element within the angiotensin II and monocyte chemoattractant protein-1 signaling cascade mediating vascular smooth muscle cells invasion.
Circulation Research (2009) 104:1337-46 PMC2764993
 (Cited by 30)
38. Ganapathy-Kanniappan S, Geschwind JF, Kunjithapatham R, Buijs M, Vossen JA, Tchernyshyov I, **Cole RN**, Syed LH, Rao PP, Ota S and Vali M
Glyceraldehyde-3-phosphate dehydrogenase (GAPDH) is pyruvylated during 3-bromopyruvate mediated cancer cell death.
Anticancer Research (2009) 29:4909-18 PMID20044597
 (Cited by 35)
39. Hsu K, Chi N, Gucek M, Van Eyk JE, **Cole RN**, Lin M and Foster DB
Miltenberger blood group antigen type III (Mi.III) enhances the expression of band 3.
Blood (2009) 114:1919-28 PMC2738576
 (Cited by 16)
40. Montes de Oca R, Shoemaker CJ, Gucek M, **Cole RN** and Wilson KL

- Barrier-to-autointegration factor proteome reveals chromatin-regulatory partners.*
PLoS ONE (2009) 4:e7050 PMC2739719
(Cited by 37)
41. Qiu C, Tarrant MK, Boronina T, Longo PA, Kavran JM, **Cole RN**, Cole PA and Leahy DJ
In vitro enzymatic characterization of near full length EGFR in activated and inhibited states.
Biochemistry (2009) 48:6624-32 PMC2747374
(Cited by 21)
42. Ratovitski T, Gucek M, Jiang H, Chighladze E, Waldron E, D'Ambola J, Hou Z, Liang Y, Poirer MA, Hirschhorn RR, Graham R, Hayden MR, **Cole RN** and Ross CA
Mutant Huntingtin N-terminal fragments of specific size mediate aggregation and toxicity in neuronal cells.
Journal of Biological Chemistry (2009) 284:10855-67 PMC2667772
(Cited by 62)
43. Ahn YH, Hwang Y, Liu H, Wang XJ, Zhang Y, Stephenson KK, Boronina TN, **Cole RN**, Dinkova-Kostova AT, Talalay P and Cole PA
Electrophilic tuning of the chemoprotective natural product sulforaphane.
Proceedings of the National Academy of Sciences of the United States of America (2010) 107:9590-5 PMC2906893
(Cited by 60)
44. Andrade F, Darrah E, Gucek M, **Cole RN**, Rosen A and Zhu X
Autocitrullination of human peptidyl arginine deiminase type 4 regulates protein citrullination during cell activation.
Arthritis & Rheumatism (2010) 62:1630-40 PMC2951335
(Cited by 32)
45. Chen H, Pimenta G, Gu Y, Sun X, Hu J, Kim MS, Chaerkady R, Gucek M, **Cole RN**, Sukumar S and Pandey A
Proteomic characterization of Her2/neu-overexpressing breast cancer cells.
Proteomics (2010) 10:3800-10 PMC(NIHMS442582)
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46. Donowitz M, Singh S, Singh P, Salahuddin FF, Chen Y, Chakraborty M, Murtazina R, Gucek M, **Cole RN**, Zachos NC, Kovbasnjuk O, Broere N, Smalley-Freed WG, Reynolds AB, Hubbard AL, Seidler U, Weinman E, de Jonge HR, Hogema BM and Li X
Alterations in the proteome of the NHERF1 knockout mouse jejunal brush border membrane vesicles.
Physiological Genomics (2010) 42A:200-10 PMC3008364
(Cited by 7)
47. Hartman IZ, Kim A, Cotter RJ, Walter K, Dalai SK, Boronina T, Griffith W, Lanar DE, Schwenk R, Krzych U, **Cole RN** and Sadegh-Nasseri S
A reductionist cell-free major histocompatibility complex class II antigen processing system identifies immunodominant epitopes.
Nature Medicine (2010) 16:1333-40 PMC3058316
(Cited by 19)
48. Huang R, Holbert MA, Tarrant MK, Curtet S, Colquhoun DR, Dancy BM, Dancy BC, Hwang Y, Tang Y, Meeth K, Marmorstein R, **Cole RN**, Khochbin S and Cole PA
Site-specific introduction of an acetyl-lysine mimic into peptides and proteins by cysteine alkylation.
Journal of the American Chemical Society (2010) 132:9986-7 PMC2912447
(Cited by 29)
49. Lagal V, Binder EM, Huynh MH, Kafsack BF, Harris PK, Diez R, Chen D, **Cole RN**, Carruthers VB and Kim K

- Toxoplasma gondii* protease TgSUB1 is required for cell surface processing of micronemal adhesive complexes and efficient adhesion of tachyzoites.
Cellular Microbiology (2010) 12:1792-808 PMC2997387
(Cited by 16)
50. Laiko M, Murtazina R, Malyukova I, Zhu C, Boedeker EC, Gutsal O, O'Malley R, **Cole RN**, Tarr PI, Murray KF, Kane A, Donowitz M and Kovbasnjuk O
Shiga toxin 1 interaction with enterocytes causes apical protein mistargeting through the depletion of intracellular galectin-3.
Experimental Cell Research (2010) 316:657-66 PMC2815162
(Cited by 8)
51. Cammarato A, Ahrens CH, Alayari NN, Qeli E, Rucker J, Reedy MC, Zmasek CM, Gucek M, **Cole RN**, Van Eyk JE, Bodmer R, O'Rourke B, Bernstein SI and Foster DB
A Mighty Small Heart: The Cardiac Proteome of Adult Drosophila melanogaster.
PLoS ONE (2011) 6:e18497 PMC3081823
(Cited by 22)
52. Donowitz M, Singh S, Singh P, Chakraborty M, Chen Y, Murtazina R, Gucek M, **Cole RN**, Zachos NC, Salahuddin FF, Kovbasnjuk O, Broere N, Smalley-Freed WG, Reynolds AB, Hubbard AL, Seidler U, Weinman E, de Jonge HR, Hogema BM and Li X
Alterations in the proteome of the NHERF2 knockout mouse jejunal brush border membrane vesicles.
Physiological Genomics (2011) 43:674-84 PMC3121161
(Cited by 3)
53. Luo W, Hu H, Chang R, Zhong J, Knabel M, O'Meally R, **Cole RN**, Pandey A and Semenza GL
Pyruvate kinase M2 is a PHD3-stimulated coactivator for hypoxia-inducible factor 1.
Cell (2011) 145:732-44 PMC3130564
(Cited by 203)
54. Marimuthu A, O'Meally RN, Chaerkady R, Subbannayya Y, Nanjappa V, Kumar P, Kelkar DS, Pinto SM, Sharma R, Renuse S, Goel R, Christopher R, Delanghe B, **Cole RN**, Harsha HC and Pandey A
A comprehensive map of the human urinary proteome.
Journal of Proteome Research (2011) 10:2734-43 PMID21500864 (no NIH funds)
(Cited by 27)
55. White MY, Brown DA, Sheng S, **Cole RN**, O'Rourke B and Van Eyk JE
Parallel Proteomics to Improve Coverage and Confidence in the Partially Annotated Oryctolagus cuniculus Mitochondrial Proteome.
Molecular and Cellular Proteomics (2011) 10:M110 004291 PMC3033681
(Cited by 4)
56. Zhong J, Chaerkady R, Kandasamy K, Gucek M, **Cole RN** and Pandey A
The interactome of a PTB domain-containing adapter protein, Odin, revealed by SILAC.
Journal of Proteomics (2011) 74:294-303 PMC3205450
(Cited by 2)
57. Baycin-Hizal D, Tabb DL, Chaerkady R, Chen L, Lewis NE, Nagarajan H, Sarkaria V, Kumar A, Wolozny D, Colao J, Jacobson E, Tian Y, O'Meally RN, Krag SS, **Cole RN**, Palsson BO, Zhang H and Betenbaugh M
Proteomic analysis of chinese hamster ovary cells.
Journal of Proteome Research (2012) 11:5265-76 PMC3772721
(Cited by 14)
58. Kadam SD, Gucek M, **Cole RN**, Watkins PA and Comi AM
Cell proliferation and oxidative stress pathways are modified in fibroblasts from Sturge-Weber syndrome patients.
Archives of Dermatology Research (2012) 304:229-35 PMID22402795

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59. Mattis VB, Svendsen SP, Ebert A, Svendsen CN, King AR, Casale M, Winokur ST, Batugedara G, Vawter M, Donovan PJ, Lock LF, Thompson LM, Atwal RS, Zhu Y, Fossale E, Gillis T, Mysore J, Li JH, Seong I, Shen Y, Chen X, Wheeler VC, MacDonald ME, Gusella JF, Akimov S, Arbez N, Juopperi T, Ratovitski T, Chiang JH, Kim WR, Chighladze E, Watkin E, Zhong C, Makri G, **Cole RN**, Margolis RL, Song H, Ming G, Ross CA, Kaye JA, Daub A, Sharma P, Mason AR, Finkbeiner S, Rushton D, Brazier SP, Battersby AA, Redfern A, Tseng HE, Harrison AW, Kemp PJ, Allen ND, Castiglioni V, Onorati M, Cattaneo E, Yu J, Thomson JA and Arjomand J
Induced pluripotent stem cells from patients with Huntington's disease show CAG-repeat-expansion-associated phenotypes.
Cell Stem Cell (2012) 11:264-78 PMID22748968
(Cited by 46)
60. Murray CI, Uhrigshardt H, O'Meally RN, **Cole RN** and Van Eyk JE
Identification and quantification of S-nitrosylation by cysteine reactive tandem mass tag switch assay.
Molecular and Cellular Proteomics (2012) 11:M111 013441 PMC3277766
(Cited by 34)
61. Ratovitski T, Chighladze E, Arbez N, Boronina T, Herbrich S, **Cole RN** and Ross CA
Huntingtin protein interactions altered by polyglutamine expansion as determined by quantitative proteomic analysis.
Cell Cycle (2012) 11:2006-21 PMC3359124
(Cited by 11)
62. Scholl PF, **Cole RN**, Ruczinski I, Gucek M, Diez R, Rennie A, Nathasingh C, Schulze K, Christian P, Yager JD, Groopman JD and West KP, Jr.
Maternal serum proteome changes between the first and third trimester of pregnancy in rural Southern Nepal.
Placenta (2012) 33:424-32 PMID22385826
(Cited by 3)
63. Zhong J, Kim MS, Chaerkady R, Wu X, Huang TC, Getnet D, Mitchell CJ, Palapetta SM, Sharma J, O'Meally RN, **Cole RN**, Yoda A, Moritz A, Loriaux MM, Rush J, Weinstock DM, Tyner JW and Pandey A
TSLP Signaling Network Revealed by SILAC-Based Phosphoproteomics.
Molecular and Cellular Proteomics (2012) 11:M112 017764 PMC3433886
(Cited by 9)
64. Zizak M, Chen T, Bartonicek D, Sarker R, Zachos NC, Cha B, Kovbasnjuk O, Korac J, Mohan S, **Cole R**, Chen Y, Tse CM and Donowitz M
Calmodulin kinase II constitutively binds, phosphorylates, and inhibits brush border Na⁺/H⁺ exchanger 3 (NHE3) by a NHERF2 protein-dependent process.
Journal of Biological Chemistry (2012) 287:13442-56 PMC3340005
(Cited by 4)
65. Herbrich SM, **Cole RN**, West KP, Jr., Schulze K, Yager JD, Groopman JD, Christian P, Wu L, O'Meally RN, May DH, McIntosh MW and Ruczinski I
Statistical Inference from Multiple iTRAQ Experiments without Using Common Reference Standards.
Journal of Proteome Research (2013) 12:594-604 PMID23270375
(Cited by 2)
66. **Cole RN**, Ruczinski I, Schulze K, Christian P, Herbrich S, Wu L, Devine LR, O'Meally RN, Shrestha S, Boronina TN, Yager JD, Groopman J and West KP, Jr.
The plasma proteome identifies expected and novel proteins correlated with micronutrient status in undernourished nepalese children.

- Journal of Nutrition** (2013) 143:1540-8 PMID23966331
67. Foster DB, Liu T, Rucker J, O'Meally RN, Devine LR, **Cole RN** and O'Rourke B
The cardiac acetyl-lysine proteome.
PLoS ONE (2013) 8:e67513 PMC3699649
68. Kunjithapatham R, Geschwind JF, Rao PP, Boronina TN, Cole RN and Ganapathy-Kanniappan S
Systemic administration of 3-bromopyruvate reveals its interaction with serum proteins in a rat model.
BMC Res Notes (2013) 6:277 PMC3728150
69. Zhang Y, Dayalan Naidu S, Samarasinghe K, Van Hecke GC, Pheely A, Boronina TN, **Cole RN**, Benjamin IJ, Cole PA, Ahn YH and Dinkova-Kostova AT
Sulphoxythiocarbamates modify cysteine residues in HSP90 causing degradation of client proteins and inhibition of cancer cell proliferation.
Br J Cancer (2014) 110:71-82 PMC3887302

Review articles

- Hart GW, Greis KD, Dong LY, Blomberg MA, Chou TY, Jiang MS, Roquemore EP, Snow DM, Kreppel LK, **Cole RN**, Comer FI, Arnold CS and Hayes BK
O-linked N-acetylglucosamine: the "yin-yang" of Ser/Thr phosphorylation? Nuclear and cytoplasmic glycosylation.
Advances in Experimental Medicine and Biology (1995R-a) 376:115-23 PMID8597237
(Cited by 112)
- Hart GW, Greis KD, Dong LY, Blomberg MA, Chou TY, Jiang MS, Roquemore EP, Snow DM, Kreppel LK, **Cole RN** and Hayes BK
Ubiquitous and temporal glycosylation of nuclear and cytoplasmic proteins.
Pure and Applied Chemistry (1995) 67:1637-45 DOI199611338
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- Hart GW, Kreppel LK, Comer FI, Arnold CS, Snow DM, Ye Z, Cheng X, DellaManna D, Caine DS, Earles BJ, Akimoto Y, **Cole RN** and Hayes BK
O-GlcNAcylation of key nuclear and cytoskeletal proteins: reciprocity with O-phosphorylation and putative roles in protein multimerization.
Glycobiology (1996) 6:711-6 PMID8953283
(Cited by 114)
- Cole RN** and Hart GW
Economical nitrogen for proteomics mass spectrometry.
American Biotechnology Laboratory (2002) August:32-4

Book Chapters

- Zipser B and **Cole RN**
Identifying a role for carbohydrate recognition in regulating neuronal architecture.
Lectins and Glycobiology (1993) Gabius, H.-J. and Gabius, S. (eds). Springer-Verlag, New York:425-32
- Cole RN** and Hart GW
Glycosyl-Phosphatidylinositol Anchors: Structure, Biosynthesis and Function.
Glycoproteins II (1997) Vol 29b, Chapter 4, J. Montreuil, H. Schachter and J. F. G. Vliegthart, eds., Elsevier, Amsterdam:69-88
(Cited by 5)
- Hart GW, **Cole RN**, Kreppel LK, Arnold CS, Comer FI, Iyer S, Cheng X, Carroll J and Parker GJ
Glycosylation of proteins – a major challenge in mass spectrometry and proteomics.

- Mass Spectrometry in Biology and Medicine (2000)** Burlingame, A.L., S.A Carr and M.A. Baldwin (eds.). Humana Press, Totowa, New Jersey:365-81
(Cited by 5)
4. Zachara NE, **Cole RN**, Hart GW and Gao Y
Detection and analysis of proteins modified by O-linked N-acetylglucosamine.
Current Protocols in Protein Science (2001) Chapter 12:Unit 12 8 PMID18429112
(Cited by 21)
 5. Zachara NE, Hart GW, **Cole RN** and Gao Y
Detection and analysis of proteins modified by O-linked N-acetylglucosamine.
Current Protocols in Molecular Biology (2002) Chapter 17:Unit 17 6 PMID18265305
(Cited by 33)

Patents

Patent Ref #: 5036
Patent Title: "Selective Fluorescent Labeling of S-Nitrosothiols"
Inventors: Cole RN, Santhanam L, Berkowitz DE, Shoukas A
Filed with: Johns Hopkins Technology Transfer
Aditya Polsani (410-516-8122, apolsan1@bme.jhu.edu.)
Status: Provisional patent

Research Program Building / Leadership

2000-present

Mass Spectrometry and Proteomic Facility

Role: Facility Director

Description: The Johns Hopkins School of Medicine Mass Spectrometry and Proteomics Facility uses mass spectrometry coupled to one (1D) and two (2D) dimensional separations by column chromatography or gel electrophoresis to identify, quantify or characterize proteins and their post-translational modifications that are expressed in well characterized protein fractions from cells, tissues or body fluids. Techniques such as difference gel electrophoresis (DIGE), isobaric tag for relative and absolute quantitation (iTRAQ), tandem mass tags (TMT) and stable isotope labeling of amino acids in cell culture (SILAC) as well as non-labeling methods (MudPIT, multi-dimensional protein identification technology) are available for quantifying relative differences in protein expression and post-translational modifications, such as acetylation, glycosylation, phosphorylation, nitrosation, ubiquitination and novel cleavage sites. Also available are Core developed methods to characterize post-translational modifications, such as LCMS methods to accurately determine the mass of intact proteins, a selective fluorescent labeling of cysteines to detect oxidized or nitrosated cysteines, or enrichment strategies to map phosphorylation, acetylation, or ubiquitination sites. This Core is an institutional resource that assists investigators and their staff in preparing and analyzing their samples or in using the Core's multi-user equipment. This Core provides pre- and post-analysis consultation on sample preparation, data analysis and interpretation; proteolytic digestions, peptide extractions, labeling and fractionations; nano-liquid chromatography separation coupled to tandem mass spectrometry analysis; database searching; compiled results reports; access to bioinformatic software; and educational programs through core presentations and technical workshops.

Funding: This Core is supported through several Center, RO1 and instrumentation grants and contracts, and fee-for-service.

- Impact:**
- 1) Assisted 288 Hopkins and 59 non-Hopkins investigators.
 - 2) Trained 795 faculty, students and staff on the use and interpretation of DIGE 2D-gel electrophoresis, MALDI MS, tandem MS technologies and quantitative proteomics.
 - 3) Co-authored 53 papers in first-rate national and international journals such as *Cell*, *Science*, *Blood*, *Journal of Biological Chemistry*, *Proceedings of the National Academy of Sciences*, *Molecular Cell*, *Nature Medicine*, *Journal of the American Chemical Society*, *Proteomics*, and *Molecular and Cellular Proteomics*
 - 4) Supports 5 major Center grants in Cardiology, Gastroenterology, International Health, Oncology, and Psychiatry departments
 - 5) Over \$32.2 million, direct costs, awarded to Hopkins because of this Core's participation
 - 6) Over \$97.1 million, direct costs, awarded to Hopkins with this Core's participation supporting the grant application

EDUCATIONAL ACTIVITIES

Educational Publications

Teaching

Classroom Instruction

05/04/06, 05/06/08, 04/27/10

Protein Bioinformatics (JHSPH 260.655)

Instructor, Quantitative Proteomics

Department of Molecular Microbiology and Immunology

School of Public Health

Johns Hopkins University

12/18/07, 12/08/08, 12/02/09, 12/01/10, 11/14/12

The Role of Chromatography and Mass Spectrometry in Biological Research (ME 330.804)

Instructor, Quantitative Proteomics

Department of Pharmacology

School of Medicine

Johns Hopkins University

03/07/08, 12/08/08, 12/09/09, 12/15/10, 12/12/11, 12/14/12, 12/18/13

Molecular Basis of Toxicology (JHSPH 187.632)

Instructor, Quantitative Proteomics

Department of Environmental Health

School of Public Health

Johns Hopkins University

11/14/13

Current Topics in Biological Chemistry (ME 340.702)

Instructor

Department of Biological Chemistry

School of Medicine

Johns Hopkins University

Workshops

2000-present, every 3rd Thursday per month

MALDI-TOF Training Workshop

Workshop organizer and Instructor
Mass Spectrometry and Proteomics Facility
School of Medicine
Johns Hopkins University

12/09/03-12/12/03, 04/27/04-04/30/04, 10/19/04-10/22/04, 01/25/05-01/28/05, 05/17/05-05/19/05,
09/20/05-09/22/05, 01/24/06-01/26/06

DIGE Training Workshop

Workshop organizer and Instructor
Mass Spectrometry and Proteomics Facility
School of Medicine
Johns Hopkins University

11/16/04-11/17/04

Sample Preparation Workshop

Workshop organizer and Instructor
Mass Spectrometry and Proteomics Facility
School of Medicine
Johns Hopkins University

01/19/06-01/21/06

Maryland Judiciary ASTAR/ASTA In-State Workshop at Hopkins

Instructor, Primer on Proteomics
Department of Medicine
School of Medicine
Johns Hopkins University

01/31/06-02/02/06, 03/07/06-03/09/06, 01/30/07-02/02/07, 03/13/07-03/16/07, 04/24/07-04/26/07,
06/26/07-06/28/07, 12/11/07-12/13/07, 06/24/08-06/26/08, 02/24/09-02/26/09

LCQ/LTQ Training Workshop

Workshop organizer and Instructor
Mass Spectrometry and Proteomics Facility
School of Medicine
Johns Hopkins University

Mentoring

Advisees/Staff in Mass Spectrometry and Proteomics Facility (Current)

12/02/2002 - present

Tatiana N. Boronina, Ph.D., Proteomics Specialist, tboroni1@jhmi.edu

03/21/2005 - present

Robert N. O'Meally, M.S., Proteomics Specialist, bomeally@JHMI.edu

11/18/2009 - present

Lauren R. DeVine, M.S., Proteomics Specialist, LaurenDeVine@jhmi.edu

08/01/2011 - present

Raghothama Chaerkady, Ph.D., Research Associate, raghothama@jhmi.edu

Advisees/Staff (Previous)

04/22/2002 – 11/26/2003

Chadwick Bradford, MS (Laboratory Manager)

Present Position: Scientist II/Mass Spec
ADME/Tox

Myriad Pharmaceuticals, Inc.

320 Wakara Way

Salt Lake City, Utah 84108

(801) 214-7838

chad.bradford@myriadpharma.com

02/03/2003 – 01/27/2006

Roberto Diez (Proteomics Specialist)

Present Position: Field Applications Scientist (FAS)

GE Healthcare Life Sciences

800 Centennial Av

Piscataway, NJ 08854, USA

410 961 9084

roberto.diez@ge.com

02/17/2003 – 08/31/2007

Zhaohui (Dawn) Chen, Ph.D. (Proteomics Specialist)

Present Position: Senior Research Scientist, Steroids

Quest Nichols Institute

33608 Ortega Highway

San Juan Capistrano, CA 92690

(949) 728-4026

zhaohui.x.chen@questdiagnostics.com

02/02/2004 – 05/13/2005

Wigbert Bengtsson, MS (Research Data Coordinator)

Present Position: Development Planning Officer
Municipality Fürstenwalde
Division of City Planning
The market 4-6
15517 Fürstenwalde / Spree
Germany
03361/557-246
w.bengtsson@fuerstenwalde-spree.de

09/07/2004 – 10/24/2004

Zhiqi Hao, Ph.D (Proteomic Specialist)

Present Position: Senior Scientist – Protein Mass Spectrometry
Thermo Fisher Scientific
355 River Oaks Parkway
San Jose, CA 95134
(408) 965-6059
zhiqi.hao@thermofisher.com

11/29/2004 - 02/28/2005

Anica Clowney (Intern)

Training Internship in Two Dimensional Electrophoresis
BioTechnical Institute of Maryland Laboratory Associates Program (www.biotechmd.org)

05/04/2005 – 07/31/2009

Marjan Gucek, Ph.D. (Proteomic Specialist)

Present Position: Director
Proteomics Core Facility
NHLBI/NIH
10 Center Drive
Building 10, Room 8C103C
Bethesda, MD 20892
(301) 594-1060
Marjan.Gucek@nih.gov

07/15/2005 – 01/31/2006

Flonne' Wildes (Senior Laboratory Technician)

Present Position: Research Technologist
Department of Radiology and Radiological Science
Johns Hopkins University
217 Traylor Building
Baltimore, MD 21205
(410) 955-7426
fwildes1@jhmi.edu

02/01/2007 – 08/24/2007

Malini Mansharamani, Ph.D. (Senior Research Specialist)

Present Position: Biologist

Center for Veterinary Medicine

Food and Drug Administration

7519 Standish Place

HFV-12

Rockville, MD 20855

(240) 276-9532

malini.mansharamani@fda.hhs.gov

01/28/2008 – 09/07/2009

David Colquhoun, Ph.D. (Proteomic Specialist)

Present Position: Research Associate

Retrovirus Lab

Department of Molecular and Comparative Pathobiology

Johns Hopkins School of Medicine

811 Edward D. Miller Research Bldg

733 N. Broadway St.

Baltimore, MD 21205

(410) 955-9770

dcolquho@jhmi.edu

Thesis Committees

02/10/04

Nidhi G. Saran (PhD advisor: R. Reeves)

Global disruption of cerebellar transcriptome and proteome in a Down syndrome mouse model

Role: Scientific advisor and feedback on Ph.D. research

12/13/06, 03/11/09, Graduated (05/12/09)

AeRyon Kim (PhD advisor: S. Sadegh-Nasseri)

Cell-free recapitulation of MHC class II antigen processing assay-Role of HLA-DM in the selection of immunodominant epitope

Role: Scientific advisor and feedback on Ph.D. research

03/26/09, 02/08/11, 02/29/12, Graduated (May 2012)

Christine A. Jelinek (PhD advisor: R. Cotter)

Profiling the Post-Translational Modifications of Human Serum Albumin

Role: Scientific advisor and feedback on Ph.D. research

12/10/09, 04/19/11, 04/19/12, 04/09/13, Graduated (09/30/13)

Jillian Prendergast (PhD advisor: R. Schnaar)

Identification of MAG-ganglioside mediated transduction molecules involved in axon survival and outgrowth

Role: Scientific advisor and feedback on Ph.D. research

06/01/10, 06/24/11, 05/03/12, 11/01/12, Graduated (03/29/13)

Lawrence W. Gray (PhD advisor: S. Lutsenko)

Mechanisms of Homeostatic Control of Copper in Tissues

Role: Scientific advisor and feedback on Ph.D. research

02/28/11

Tricia Cottrell (PhD advisor: A. Rosen)

The Identification of Novel Autoantigens Expressed in Progenitor Cells

Role: Scientific advisor and feedback on Ph.D. research

11/12/12

Nianbin (Nelson) Song (PhD advisor: S. Sadegh-Nasseri)

Qualifying Oral Exam Committee in Immunology

Role: Alternate committee member

Training Grant Participation (Post Doctoral)

07/01/2004 - 06/30/2009

NIH/NIDDK Post Doctoral Training Grant T32 DK07632-13

Basic Science Research in Digestive Diseases

Role: Advisor and Director of Mass Spectrometry Facility

06/10/04

Ning Zeng, MD (PI advisor: M. Donowitz)

NIH/NIDDK Post Doctoral Training Grant T32 DK07632-13

Proteomics of gastric intestinal system during digestion

Role: Scientific advisor and feedback on research

12/06/04, 04/27/06

Dawei Yang, MD (PI advisor: M. Goggins)

NIH/NIDDK Post Doctoral Training Grant T32 DK07632-13

Early diagnosis of pancreatic cancer via molecular makers

Role: Scientific advisor and feedback on research

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2000 – present
Director of Mass Spectrometry and Proteomics Facility

Editorial Activities

Journal Peer Review Activities

2001 Journal of Neuroscience

2002 Analytical Biochemistry
Mitochondrion Journal

2004 Electrophoresis
Journal of Proteomic Research
Proteomics

2005 Proteomics
Molecular and Cellular Proteomics

2006 Proteome Science

2007 Analytical Chemistry
Journal of Proteomic Research
Proteomics

2008 Journal of Proteomic Research
Molecular and Cellular Proteomics
Proteomics (7 reviews)

2009 Mass Spectrometry Reviews
Proteomics

2010 Analytical Chemistry (5 reviews)
Molecular and Cellular Proteomics

2011 Proteomics (3 reviews)
Blood

2012 Journal of Proteomic Research
Proteomics

2013 Clinical Cancer Research
Journal of Proteomic Research (2 reviews)
Proteomics (6 reviews)

Advisory Committees, Review Groups/Study Sections

Advisory Committees

12/15/2003, 05/25/2007

Research Technology Program Review Committee for Laboratory of Proteomics & Analytical Technologies (LPAT)

National Cancer Institute at Frederick, MD

Role: Scientific advice and feedback on LPAT research

01/20/2011, 03/28/2012, 04/16/13

Proteomics Annual Advisory Board

Lombardi Comprehensive Cancer Center Shared Resources

Georgetown University Medical Center, Washington, DC

Role: Scientific advice and feedback on LCCC Proteomics Core

01/24/2011, 11/02/2012

Analytical Pharmacology Core Steering Committee (APCSC)

The Sidney Kimmel Comprehensive Cancer Center

Johns Hopkins School of Medicine, Baltimore, MD

Role: Scientific advice and feedback on Analytical Pharmacology Core

Review Groups

2008 Science and Technology Center in Ukraine (STCU).

U.S. Civilian Research and Development Foundation (CRDF).

1530 Wilson Blvd. 3rd Floor, Arlington VA 22209

(703) 526-9720

<http://www.crdf.org>

Role: Grant Reviewer

Notes: The STCU primary objective is to provide peaceful, non-weapons opportunities to weapons scientists and engineers in the New Independent States (NIS) of the former Soviet Union, particularly those with knowledge and skills in weapons of mass destruction.

2012 Brain Science Translational Research Grants

Johns Hopkins Medicine Brain Science Institute (BSi)

855 North Wolfe Street

John G. Rangos, Sr. Building, Room 270

Baltimore, Maryland 21205

(410) 955-4504

www.brainscienceinstitute.org

Role: Grant Reviewer

2012 Glycoconjugates in Cardiovascular Research Fellowships

Programs of Excellence in Glycosciences

Glycoconjugates and Cardiovascular Disease

Johns Hopkins School of Medicine

<http://pegnac.sdsc.edu/cardiopeg/>

Glyco-CardiologistFellowship@jhmi.edu

Role: Grant Reviewer

Professional Societies

1992-2000 Society for Glycobiology, member
1987-2000 Society of Neuroscience, member
2000- present Greater Baltimore-Washington Area Mass Spectrometry Discussion Group,
member and Co-Chair (08/01/2002 to 07/31/2004).
2002-present American Society for Mass Spectrometry, member

Conference Organizer, Session Chair

11/29/2000

Johns Hopkins School of Medicine Mass Spectrometry Symposium
Montecastle Auditorium,
Preclinical Teaching Building
Baltimore, MD
Sponsor: Mass Spectrometry and Proteomics Facility
Role: Organizer and Speaker

08/01/2002 through 07/31/2004

Greater Baltimore-Washington Area Mass Spectrometry Discussion Group Meetings
Shimadzu Training Center
Columbia, MD
Sponsor: Greater Baltimore-Washington Area Mass Spectrometry Discussion Group
Role: Co-Chair

01/09/2006 – 01/11/2006

First Annual Atlantic Digestive Diseases Center Conference
Wintergreen Resort
Wintergreen, VA
Sponsor: The Digestive Health Center of Excellence at the University of Virginia
Role: Co-Chair of Proteomics Core Session

02/28/2009

American Society for Mass Spectrometry Conference Program Review Committee
Sheraton Hotel
Linthicum, MD
Sponsor: American Society for Mass Spectrometry
Role: Review abstract and schedule poster presentations for the 57th national conference in Philadelphia

RECOGNITION

Awards, Honors

- 1992 Jack Hoffert Memorial Award Outstanding Graduate Student in Physiology, MSU, East Lansing, MI
- 1993-1995 NIH National Research Service Award, NIH, Bethesda, MD

Invited Talks

- 1998 ***“Analysis of Glycopeptides by Mass Spectrometry”***
3rd Annual Local Finnigan Customer Forums
Langhorne, PA (Oct 26) and Teaneck, NJ (Oct 28)
Sponsor: ThermoFinnigan
- 1998 ***“Cytoplasmic glycosylation and phosphorylation are localized to the same regulatory domains in synapsin I”***
Annual meeting of the Society for Glycobiology (Nov 11-14)
Baltimore, MD
Sponsor: Society for Glycobiology
- 2001 ***“O-GlcNAc Glycosylation in nerve terminals”***
Neuroscience Program Seminar Series at Michigan State University (April 26)
East Lansing, MI
Sponsor: Dr. Birgit Zipser, Department of Physiology, MSU
- 2001 ***“Mass Spectrometry Facility at Johns Hopkins School of Medicine”***
Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Jun 14)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2001 ***“What is Proteomics?”***
Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Nov 8)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2002 ***“Mapping Glycosylation Sites using Affinity Tags”***
Discovery Proteomics Seminar Series (April 16)
Somerset, NJ.
Sponsor: Applied Biosystems
- 2002 ***“Technical Implementation and Coordination Core of the Hopkins NHLBI Proteomics Center: Mission, Structure, Capabilities”***
Hopkins NHLBI Proteomics Initiative Center Seminar Series (Oct 8)
Johns Hopkins University
Sponsor: Hopkins NHLBI Proteomics Initiative Center
- 2003 ***“Proteomic Methods Development in Hopkins NHLBI Proteomics Center”***
Hopkins NHLBI Proteomics Initiative Center Seminar Series (Mar 19)
Johns Hopkins University
Sponsor: Hopkins NHLBI Proteomics Initiative Center
- 2003 ***“Successful Mass Spectrometry Analysis is a Joint Venture”***
Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Apr 1)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center

- 2003 ***“1,4-Dithiothreitol (DTT): An Affinity Tag for Mapping Phosphorylation and Glycosylation Sites”***
 Life Sciences Seminar Series (May 5)
 Bethesda, MD
 Sponsor: Dionex Corporation
- 2003 ***“Quantifying Protein Expression using Difference Gel Expression (DIGE) Analysis”***
 Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Oct 15)
 Johns Hopkins University
 Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2004 ***“Differential Protein Expression Analysis on Mini-2D gels”***
 Hopkins NHLBI Proteomics Initiative Center Seminar Series (Aug 20)
 Johns Hopkins University
 Sponsor: Hopkins NHLBI Proteomics Initiative Center
- 2004 ***“Proteomic approaches to differential protein expression in normal vs. disease states”***
 Molecular diagnostic techniques pre-meeting class
 17th Annual Meeting of Association of Medical Laboratory Immunologists (Aug 21)
 Baltimore, MD
 Sponsor: Association of Medical Laboratory Immunologists
- 2004 ***“Mass Spectrometry/Proteomics Services Available to the DDBRDC Center”***
 Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Nov 27)
 Johns Hopkins University
 Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2005 ***“The School of Medicine Mass Spectrometry and Proteomics Facility”***
 Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Jun 1)
 Johns Hopkins University
 Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2005 ***“Relative quantification of proteins using iTRAQ and O18 labeling”***
 Hopkins NHLBI Proteomics Initiative Center Seminar Series (Jun 17)
 Johns Hopkins University
 Sponsor: Hopkins NHLBI Proteomics Initiative Center
- 2005 ***“Quantitative DIGE Analysis and High Protein Load Using Contiguous IPG Strip Segments for Two-Dimensional Electrophoresis on Mini-Gels”***
 Annual DIGE User Group Meeting (Sep 13)
 Vanderbilt University
 Nashville, TN
 Sponsor: GE HealthCare
- 2005 ***“Differential Protein Expression Analysis”***
 The Application of Throughput Technologies to Biomedical/Bioenvironmental Research Symposium (Sept 30)
 Morgan State University
 Baltimore, MD
 Sponsor: Morgan State University’s Research Centers in Minority Institutions Program
- 2006 ***“Using iTRAQ Technology to Quantify Low Abundant Proteins”***
 Hopkins NHLBI Proteomics Initiative Center Seminar Series (Feb 17)
 Johns Hopkins University
 Sponsor: Hopkins NHLBI Proteomics Initiative Center

- 2006 ***“Analysis of phosphorylation and glycosylation by vMALDI_LTQ tandem mass spectrometry”***
Hopkins NHLBI Proteomics Initiative Center Seminar Series (Feb 17)
Johns Hopkins University
Sponsor: Hopkins NHLBI Proteomics Initiative Center
- 2006 ***“Using iTRAQ Technology to Quantify Low Abundant Proteins”***
Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Apr 12)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2006 ***“Selective Fluorescent Labeling of S-nitrosothiols (S-FLOS)”***
8th NHLBI Proteomics Investigator Meeting at Uniform Services University (Sept 21)
Bethesda, MD
Sponsor: NHLBI Proteomics Center at Uniform Services University.
- 2007 ***“Selective Fluorescent Labeling of S-nitrosothiols (S-FLOS): A Novel Method for Studying S-nitrosylation”***
Annual DIGE User Group Meeting (Jan 17-18)
Athens, GA
Sponsor: GE HealthCare
- 2007 ***“Tackling the Nitrosoproteome with S-FLOS: A Novel Method for Quantifying S-Nitrosylation Sites in Protein Extracts, Cell Lines and Tissue”***
Hopkins NHLBI Proteomics Initiative Center Seminar Series (Feb 16)
Johns Hopkins University
Sponsor: Hopkins NHLBI Proteomics Initiative Center
- 2007 ***“Mass Spectrometry/Proteomics Facility at Johns Hopkins School of Medicine”***
Enhancement-of Research Collaborations Retreat (May 1)
Johns Hopkins University
Sponsor: Department of Medicine
- 2008 ***“In Search of PTMs”***
Proteomics Interest Group (May 9)
NIH-National Institute on Aging at Bayview,
Sponsor: Stuart R. Maudsley, Ph.D. Gerontology Research Center
- 2008 ***“High Resolution Intact Protein Mass Analysis and New Developments iTRAQ Analysis”***
Hopkins NHLBI Proteomics Initiative Center Seminar Series (Jun 20)
Johns Hopkins University
Sponsor: Hopkins NHLBI Proteomics Initiative Center
- 2008 ***“New Developments in iTRAQ Analysis: Quantifying Protein Expression and Phosphorylation”***
Hopkins Digestive Diseases Basic Research Development Center Seminar Series (Jul 18)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2008 ***“Proteomics”***
Epithelial Biology Interest Group (Nov 12)
Bayview Asthma and Allergy Center
Johns Hopkins University
Sponsor: Venkataramana Sidhaye, MD. Pulmonary and Critical Care
- 2009 ***“Evolution and Growth of the JHU SOM Mass Spectrometry and Proteomics Facility 2002-2009”***

- Hopkins Digestive Diseases Basic Research Development Center Seminar Series
(Sep 24)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2010 ***“Quantitative Proteomics”***
The Sidney Kimmel Comprehensive Cancer Center Faculty Seminars (Mar 15)
Johns Hopkins University
Sponsor: Sidney Kimmel Comprehensive Cancer Center
- 2010 ***“From Protein Identification to Enzyme Kinetics”***
Hopkins Digestive Diseases Basic and Translational Research Core Center Seminar Series (Sep 23)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2011 ***“Intact Protein Analysis Using Mass Spectrometry”***
The Johns Hopkins Proteomic Innovation Center in Heart Failure Retreat (Apr 13)
Mt. Washington Conference Center
Baltimore, MD
Sponsor: Johns Hopkins Proteomic Innovation Center in Heart Failure
- 2011 ***“From Protein Identification to Enzyme Kinetics”***
Department of Pharmacology Seminar Series (Sept 1)
School of Pharmacy
University of Maryland
Baltimore, MD
Sponsor: Dr. Maureen Kane, Department of Pharmacology, UMD
- 2011 ***“Identifying and Quantifying Protein Modifications ”***
Hopkins Digestive Diseases Basic and Translational Research Core Center Seminar Series (Oct 3)
Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2011 ***“Identifying and Quantifying Protein Modifications ”***
The Johns Hopkins Proteomic Innovation Center in Heart Failure Seminar Series (Oct 21)
Johns Hopkins University
Sponsor: The Johns Hopkins Proteomic Innovation Center in Heart Failure
- 2012 ***“What is Normal in Normalization”***
The Johns Hopkins Proteomic Innovation Center in Heart Failure Retreat (May 1)
Mt. Washington Conference Center
Baltimore, MD
Sponsor: Johns Hopkins Proteomic Innovation Center in Heart Failure
- 2012 ***“Quantitative Proteomics in Nutrition, Enzyme Kinetics and Post-translational Modifications”***
Department of Biological Chemistry Seminar Series (Sept 18)
Johns Hopkins University
Sponsor: Dr. Gerald W. Hart, Chair
- 2013 ***“Quantitative Proteomics, Normalization and Nutrition”***
Thermo Scientific Proteomics & Metabolomics Seminar Tour (Jan 16)
Johns Hopkins University
Sponsor: Thermo Scientific
- 2013 ***“Core Use and Plans for 2013-14”***
Hopkins Digestive Diseases Basic and Translational Research Core Center Seminar Series (Oct 1)

- Johns Hopkins University
Sponsor: Hopkins Digestive Diseases Basic Research Development Center
- 2013 ***“Forays into PSAQ Analysis (Protein Standard Absolute Quantification)”***
The Johns Hopkins Proteomic Innovation Center in Heart Failure Seminar Series
(Oct 18)
Johns Hopkins University
Sponsor: The Johns Hopkins Proteomic Innovation Center in Heart Failure
- 2014 ***“An update on PSAQ targeted quantification of the plasma proteome correlating with micronutrient status in undernourished Nepalese children”***
The Johns Hopkins Proteomic Innovation Center in Heart Failure Seminar Series
(Jan 17)
Johns Hopkins University
Sponsor: The Johns Hopkins Proteomic Innovation Center in Heart Failure

Panels

06/24/2004 – 06/25/2004

Core Facilities Focus Group

Sigma Aldrich, St. Louis, MO

Role: Scientific advice and feedback on applications and products to support proteomic core facilities

11/14/2004 – 11/15/2004

Voice of the Customer

Amersham Biosciences, Piscataway, NJ

Role: Scientific advice and feedback on mass spectrometry and two-dimensional gel electrophoresis applications and products

02/11/05 – present

Guidepoint Global Advisors

New York, NY

212.375.2980

www.guidepointglobal.com/advisors

Notes: Guidepoint Global Advisors is an exclusive international consulting network and market research company comprised of over 150,000 executives, managers, doctors, engineers, attorneys, consultants and other academic and industry professionals who provide consulting services, primarily via telephone consultations, to corporations and institutional investment firms globally.

Role: Consultant on mass spectrometry related techniques and products