

GARY L. GLISH

Professor of Chemistry
University of North Carolina
Chapel Hill, NC 27599-3290
(919) 962-2303
email: glish@unc.edu

Education

1972-1976 B.A., Chemistry, Economics, Wabash College
1976-1980 Ph.D., Chemistry, Purdue University

Appointments

2000-2006 Vice Chair, Department of Chemistry, University of North Carolina
1995- Member, Program in Molecular and Cellular Biophysics
1992- Faculty, Department of Chemistry, University of North Carolina
1980-1992 Research Staff and Group Leader, Oak Ridge National Laboratory.

Other Experiences, Memberships, Service

President, American Society for Mass Spectrometry 2008-2010
Vice President for Programs, American Society for Mass Spectrometry 2006-2008
Associate Editor, *Journal of the American Society for Mass Spectrometry*, 1990-2006.
Chair, *International Workshop on MS/MS*, 1999-2006.
Coordinator, Department of Chemistry Middle School Outreach program for minorities
Editorial Advisory Board, *Instrumentation Science and Technology*, 1993-present.
NIH Metallobiochemistry Study Section 1993-1997
NIH Special Study Sections, 1990-2004.
U.S. Representative, Organizing Committee, *International Workshop on MS/MS*, 1993 -1998.
Vice President for Arrangements, American Society for Mass Spectrometry, 1987-89.
Board of Directors, Asilomar Conference on Mass Spectrometry, 1987-89.
Member, American Society for Mass Spectrometry
Member, American Chemical Society
Member, American Association for the Advancement of Science
Member, Triangle Area Mass Spectrometry Discussion Group

Peer Reviewed Publications

- 132 Jue, A.L., Racine, A.H., Glish, G.L., The effect of ion trap temperature on the dissociation of peptide ions in a quadrupole ion trap. *International Journal of Mass Spectrometry*, **2011**, 301, 74-83.
- 131 Newsome, G.A., Glish, G.L., A New Approach to IRMPD Using Selective Ion Dissociation in a Quadrupole Ion Trap. *Journal of the American Society for Mass Spectrometry*. **2011**, 22, 207-213.
- 130 Falconer, T.M., Lewis, W.K., Bemish, R.J., Miller, R.E., Glish, G.L., Formation of cold ion-neutral clusters using superfluid helium nanodroplets. *Review of Scientific Instruments*. 2010, 81.
- 129 Remes, P.M., Glish, G.L., On The Time Scale of Internal Energy Relaxation of AP-MALDI and nano-ESI Ions in a Quadrupole Ion Trap. *Journal of the American Society for Mass Spectrometry*, **2009**, 20, 1801-1812.

- 128 Bushey, J.M., Baba, T., Glish, G.L., Simultaneous Collision Induced Dissociation of the Charge Reduced Parent Ion during Electron Capture Dissociation. *Analytical Chemistry*, **2009**. *81*, 6156-6164.
- 127 Bushey, J.M., Danell, R.M., Glish, G.L., Iterative Accumulation Multiplexing Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Analytical Chemistry*, **2009**. *81*, 5623-5628.
- 126 Newsome, G.A., Glish, G.L., Improving IRMPD in a Quadrupole Ion Trap. *Journal of the American Society for Mass Spectrometry*, **2009**. *20*, 1127-1131.
- 125 Bushey, J.M., Kaplan, D.A., Danell, R.M., Glish, G.L., Pulsed Nano-Electrospray Ionization: Characterization of Temporal Response and Implementation with a Flared Inlet Capillary. *Instrumentation Science & Technology*, **2009**. *37*, 257-273.
- 124 Remes, P.M., Glish, G.L., Mapping the Distribution of Ion Positions as a Function of Quadrupole Ion Trap Mass Spectrometer Operating Parameters to Optimize Infrared Multiphoton Dissociation. *Journal of Physical Chemistry A*, **2009**. *113*, 3447-3454.
- 123 Allen, J.M., Racine, A.H., Berman, A.M., Johnson, J.S., Bythell, B.J., Paizs, B., Glish, G.L., Why Are $a(3)$ Ions Rarely Observed? *Journal of the American Society for Mass Spectrometry*, **2008**. *19*, 1764-1770.
- 122 Glish, G.L., Burinsky, D.J., Hybrid mass spectrometers for tandem mass Spectrometry. *Journal of the American Society for Mass Spectrometry*, **2008**. *19*, 161-172.
- 121 Remes, P.A., Glish, G.L., Collisional cooling in a quadrupole ion trap at sub-ambient temperatures. *International Journal of Mass Spectrometry*, **2007**. *265*, 176-181.
- 120 Lennon, J.D., Cole, S.P., Glish, G.L., Ion/molecule reactions to chemically deconvolute the electrospray ionization mass spectra of synthetic polymers. *Analytical Chemistry*, **2006**. *78*, 8472-8476.
- 119 Black, D.M., Payne, A.H., Glish, G.L., Determination of cooling rates in a quadrupole ion trap. *Journal of the American Society for Mass Spectrometry*, **2006**. *17*, 932-938.
- 118 Racine, A.H., Payne, A.H., Remes, P.M., Glish, G.L., Thermally assisted collision-induced dissociation in a quadrupole ion trap mass spectrometer. *Analytical Chemistry*, **2006**. *78*, 4609-4614.
- 117 Payne, A.H., Glish, G.L., *Tandem mass spectrometry in quadrupole ion trap and ion cyclotron resonance mass spectrometers*, in *Biological Mass Spectrometry*. 2005. p. 109-148.
- 116 Cunningham, C., Glish, G.L., Burinsky, D.J., High amplitude short time excitation: A method to form and detect low mass product ions in a quadrupole ion trap mass spectrometer. *Journal of the American Society for Mass Spectrometry*, **2006**. *17*, 81-84.
- 115 Dalton, C.N., Jaoui, M., Kamens, R.M., Glish, G.L., Continuous real-time analysis of products from the reaction of some monoterpenes with ozone using atmospheric sampling glow discharge ionization coupled to a quadrupole ion trap mass spectrometer. *Analytical Chemistry*, **2005**. *77*, 3156-3163.
- 114 Lee, S.H., Brodnick, R.L., Glish, G.L., Kohn, H., 3,8,11,16-tetrakis(aminomethyl)-1,2,9,10-tetrathia-cyclohexadecane tetra-trifluoroacetic acid: synthetic precursor to a novel thio-substituted diamine. *Tetrahedron*, **2005**. *61*, 1749-1754.
- 113 Raska, C.S., Parker, C.E., Sunnarborg, S.W., Pope, R.M., Lee, D.C., Glish, G.L., Borchers, C.H., Rapid and sensitive identification of epitope-containing peptides by direct matrix-assisted laser desorption/ionization tandem mass spectrometry of peptides affinity-bound to antibody beads. *Journal of the American Society for Mass Spectrometry*, **2003**. *14*, 1076-1085.

- 112 Danell, R.M., Danell, A.S., Glish, G.L., Vachet, R.W., The use of static pressures of heavy gases within a quadrupole ion trap. *Journal of the American Society for Mass Spectrometry*, **2003**. *14*, 1099-1109.
- 111 Dalton, C.N., Glish, G.L., Electrospray-atmospheric sampling glow discharge ionization source for the direct analysis of liquid samples. *Analytical Chemistry*, **2003**. *75*, 1620-1627.
- 110 Glish, G.L., Vachet, R.W., The basics of mass spectrometry in the twenty-first century. *Nature Reviews Drug Discovery*, **2003**. *2*, 140-150.
- 109 Ray, K.L., Glish, G.L., Matrix-assisted laser desorption/ionization-boundary-activated dissociation of peptide ions in a quadrupole ion trap. *International Journal of Mass Spectrometry*, **2003**. *222*, 75-83.
- 108 Raska, C.S., Parker, C.E., Huang, C., Han, J., Glish, G.L., Pope, M., Borchers, C.H., Pseudo-MS3 in a MALDI orthogonal quadrupole-time of flight mass spectrometer. *Journal of the American Society for Mass Spectrometry*, **2002**. *13*, 1034-1041.
- 107 Chen, P.H., Richardson, S.D., Krasner, S.W., Majetich, G., Glish, G.L., Hydrogen abstraction and decomposition of bromopicrin and other trihalogenated disinfection byproducts by GC/MS. *Environmental Science & Technology*, **2002**. *36*, 3362-3371.
- 106 Raska, C.S., Parker, C.E., Dominski, Z., Marzluff, W.F., Glish, G.L., Pope, R.M., Borchers, C.H., Direct MALDI-MS/MS of phosphopeptides affinity-bound to immobilized metal ion affinity chromatography beads. *Analytical Chemistry*, **2002**. *74*, 3429-3433.
- 105 Asam, M.R., Glish, G.L., Collision-induced signal enhancement (CISE): The use of boundary activation to effect non-resonant CISE. *Journal of the American Society for Mass Spectrometry*, **2002**. *13*, 650-658.
- 104 Danell, A.S., Glish, G.L., Charge permutation reactions in beam type mass spectrometers. *International Journal of Mass Spectrometry*, **2001**. *212*, 219-227.
- 103 Danell, A.S., Glish, G.L., Evidence for ionization-related conformational differences of peptide ions in a quadrupole ion trap. *Journal of the American Society for Mass Spectrometry*, **2001**. *12*, 1331-1338.
- 102 Payne, A.H., Glish, G.L., Thermally assisted infrared multiphoton photodissociation in a quadrupole ion trap. *Analytical Chemistry*, **2001**. *73*, 3542-3548.
- 101 Lin, T., Payne, A.H., Glish, G.L., Dissociation pathways of alkali-cationized peptides: Opportunities for C-terminal peptide sequencing. *Journal of the American Society for Mass Spectrometry*, **2001**. *12*, 497-504.
- 100 Payne, A.H., Glish, G.L., Gas-phase ion/ion interactions between peptides or proteins and iron ions in a quadrupole ion trap. *International Journal of Mass Spectrometry*, **2001**. *204*, 47-54.
- 99 Danell, R.M., Glish, G.L., A new approach for effecting surface-induced dissociation in an ion cyclotron resonance mass spectrometer: A modeling study. *Journal of the American Society for Mass Spectrometry*, **2000**. *11*, 1107-1117.
- 98 Payne, A.H., Chelf, J.H., Glish, G.L., C-terminal peptide sequencing using acetylated peptides with MSn in a quadrupole ion trap. *Analyst*, **2000**. *125*, 635-640.
- 97 Ranasinghe, Y.A., Glish, G.L., Intra- and intermolecular isotope effects for hydrogen loss from protonated aniline and the barrier to hydrogen transfer between the ring and substituent. *International Journal of Mass Spectrometry*, **1999**. *191*, 295-302.
- 96 Korn, M.R., Lennon, J.D., Glish, G.L., Gagne, M.R., alpha,omega-heterotelechelic poly(epsilon-caprolactone)s via ring-opening/chain-transfer polymerization and their utility as precursors to AB

and ABC block copolymers. *Macromolecules*, **1999**. *32*, 5149-5153.

- 95 Asam, M.R., Glish, G.L., Determination of the dissociation kinetics of a transient intermediate. *Journal of the American Society for Mass Spectrometry*, **1999**. *10*, 119-125.
- 94 Lin, T., Glish, G.L., C-terminal peptide sequencing via multistage mass spectrometry. *Analytical Chemistry*, **1998**. *70*, 5162-5165.
- 93 Asam, M.R., Ray, K.L., Glish, G.L., Collision-induced signal enhancement: A method to increase product ion intensities in MS/MS and MS_n experiments. *Analytical Chemistry*, **1998**. *70*, 1831-1837.
- 92 Vachet, R.W., Ray, K.L., Glish, G.L., Origin of product ions in the MS/MS spectra of peptides in a quadrupole ion trap. *Journal of the American Society for Mass Spectrometry*, **1998**. *9*, 341-344.
- 91 Vachet, R.W., Glish, G.L., New method to study the effects of peptide sequence on the dissociation energetics of peptide ions. *Journal of the American Society for Mass Spectrometry*, **1998**. *9*, 175-177.
- 90 Vachet, R.W., Glish, G.L., Boundary-activated dissociation of peptide ions in a quadrupole ion trap. *Analytical Chemistry*, **1998**. *70*, 340-346.
- 89 Hostetler, M.J., Wingate, J.E., Zhong, C.J., Harris, J.E., Vachet, R.W., Clark, M.R., Londono, J.D., Green, S.J., Stokes, J.J., Wignall, G.D., Glish, G.L., Porter, M.D., Evans, N.D., Murray, R.W., Alkanethiolate gold cluster molecules with core diameters from 1.5 to 5.2 nm: Core and monolayer properties as a function of core size. *Langmuir*, **1998**. *14*, 17-30.
- 88 Asam, M.R., Glish, G.L., Tandem mass spectrometry of alkali cationized polysaccharides in a quadrupole ion trap. *Journal of the American Society for Mass Spectrometry*, **1997**. *8*, 987-995.
- 87 Lennon, J.D., Glish, G.L., A MALDI probe for mass spectrometers. *Analytical Chemistry*, **1997**. *69*, 2525-2529.
- 86 Vachet, R.W., Bishop, B.M., Erickson, B.W., Glish, G.L., Novel peptide dissociation: Gas-phase intramolecular rearrangement of internal amino acid residues. *Journal of the American Chemical Society*, **1997**. *119*, 5481-5488.
- 85 Ballard, K.D., Orkiszewski, R.S., Vachet, R.W., Glish, G.L., Vrbanac, J.J., Gaskell, S.J., Parent ion resolution in linked scans for dissociations occurring in the first field-free region of sector mass spectrometers. *Journal of the American Society for Mass Spectrometry*, **1997**. *8*, 545-553.
- 84 Vachet, R.W., Glish, G.L., Ballard, K.D., Orkiszewski, R.S., Prediction of artifact peak intensity in linked scans for dissociations occurring in the first field-free region of sector mass spectrometers. *Journal of the American Society for Mass Spectrometry*, **1997**. *8*, 554-560.
- 83 Vachet, R.W., Glish, G.L., Effects of heavy gases on the tandem mass spectra of peptide ions in the quadrupole ion trap. *Journal of the American Society for Mass Spectrometry*, **1996**. *7*, 1194-1202.
- 82 Lin, T., Asam, M.R., Glish, G.L., Reaction from isomeric parent ions in the dissociation of dimethylpyrroles. *Journal of the American Society for Mass Spectrometry*, **1996**. *7*, 930-937.
- 81 Vachet, R.W., Asam, M.R., Glish, G.L., Secondary interactions affecting the dissociation patterns of arginine-containing peptide ions. *Journal of the American Chemical Society*, **1996**. *118*, 6252-6256.
- 80 Ranasinghe, Y.A., Glish, G.L., Reactions of the phenylium cation with small oxygen- and nitrogen-containing molecules. *Journal of the American Society for Mass Spectrometry*, **1996**. *7*, 473-481.
- 79 Lennon, J.D., Shinn, D., Vachet, R.W., Glish, G.L., Strategy for pulsed ionization methods on a sector mass spectrometer. *Analytical Chemistry*, **1996**. *68*, 845-849.

- 78 Vachet, R.W., Winders, A.D., Glish, G.L., Correlation of kinetic energy losses in high-energy collision induced dissociation with observed peptide product ions. *Analytical Chemistry*, **1996**. *68*, 522-526.
- 77 Charles, M.J., McLuckey, S.A., Glish, G.L., Competition between Resonance Ejection and Ion Dissociation During Resonant Excitation in a Quadrupole Ion-Trap. *Journal of the American Society for Mass Spectrometry*, **1994**. *5*, 1031-1041.
- 76 McLuckey, S.A., Vanberkel, G.J., Goeringer, D.E., Glish, G.L., Ion-Trap Mass-Spectrometry - Using High-Pressure Ionization. *Analytical Chemistry*, **1994**. *66*, A737-A743.
- 75 McLuckey, S.A., Vanberkel, G.J., Goeringer, D.E., Glish, G.L., Ion-Trap Mass-Spectrometry of Externally Generated Ions. *Analytical Chemistry*, **1994**. *66*, A689-A696.
- 74 Glish, G.L., Multiple Stage Mass-Spectrometry - the Next-Generation Tandem Mass-Spectrometry Experiment. *Analyst*, **1994**. *119*, 533-537.
- 73 Glish, G.L., Greaves, R.G., McLuckey, S.A., Hulett, L.D., Surko, C.M., Xu, J., Donohue, D.L., Ion Production by Positron-Molecule Resonances. *Physical Review A*, **1994**. *49*, 2389-2393.
- 72 Hulett, L.D., Donohue, D.L., Xu, J., Lewis, T.A., McLuckey, S.A., Glish, G.L., Mass-Spectrometry Studies of the Ionization of Organic-Molecules by Low-Energy Positrons. *Chemical Physics Letters*, **1993**. *216*, 236-240.
- 71 Xu, J., Hulett, L.D., Lewis, T.A., Donohue, D.L., McLuckey, S.A., Glish, G.L., Positron-Induced Dissociation of Organic-Molecules. *Physical Review A*, **1993**. *47*, 1023-1030.
- 70 Chambers, D.M., McLuckey, S.A., Glish, G.L., Role of Gas-Dynamics in Negative-Ion Formation in an Atmospheric Sampling Glow-Discharge Ionization Source. *Analytical Chemistry*, **1993**. *65*, 778-783.
- 69 Chambers, D.M., Goeringer, D.E., McLuckey, S.A., Glish, G.L., Matrix-Assisted Laser Desorption of Biological Molecules in the Quadrupole Ion Trap Mass-Spectrometer. *Analytical Chemistry*, **1993**. *65*, 14-20.
- 68 Hart, K.J., McLuckey, S.A., Glish, G.L., Evidence of Isomerization During Ion Isolation in the Quadrupole Ion Trap. *Journal of the American Society for Mass Spectrometry*, **1992**. *3*, 680-682.
- 67 Vanberkel, G.J., McLuckey, S.A., Glish, G.L., Electrochemical Origin of Radical Cations Observed in Electrospray Ionization Mass-Spectra. *Analytical Chemistry*, **1992**. *64*, 1586-1593.
- 66 McLuckey, S.A., Glish, G.L., Duckworth, D.C., Marcus, R.K., Radiofrequency Glow-Discharge Ion Trap Mass-Spectrometry. *Analytical Chemistry*, **1992**. *64*, 1606-1609.
- 65 Hart, K.J., McLuckey, S.A., Glish, G.L., Reaction of Analyte Ions with Neutral Chemical Ionization Gas. *Journal of the American Society for Mass Spectrometry*, **1992**. *3*, 549-557.
- 64 Goeringer, D.E., Whitten, W.B., Ramsey, J.M., McLuckey, S.A., Glish, G.L., Theory of High-Resolution Mass-Spectrometry Achieved Via Resonance Ejection in the Quadrupole Ion Trap. *Analytical Chemistry*, **1992**. *64*, 1434-1439.
- 63 McLuckey, S.A., Goeringer, D.E., Glish, G.L., Collisional Activation with Random Noise in Ion Trap Mass-Spectrometry. *Analytical Chemistry*, **1992**. *64*, 1455-1460.
- 62 Ramsey, R.S., Vanberkel, G.J., McLuckey, S.A., Glish, G.L., Determination of Pyrimidine Cyclobutane Dimers by Electrospray Ionization Ion Trap Mass-Spectrometry. *Biological Mass Spectrometry*, **1992**. *21*, 347-352.
- 61 Jacobson, K.B., Arlinghaus, H.F., Buchanan, M.V., Chen, C.H., Glish, G.L., Hettich, R.L., McLuckey, S.A.,

Applications of Mass-Spectrometry to DNA Sequencing. *Genetic Analysis-Biomolecular Engineering*, **1991**. *8*, 223-229.

- 60 Vanberkel, G.J., McLuckey, S.A., Glish, G.L., Unimolecular and Collision-Induced Reactions of Doubly Charged Porphyrins. *Journal of the American Society for Mass Spectrometry*, **1992**. *3*, 235-242.
- 59 McLuckey, S.A., Vanberkel, G.J., Glish, G.L., Tandem Mass-Spectrometry of Small, Multiply Charged Oligonucleotides. *Journal of the American Society for Mass Spectrometry*, **1992**. *3*, 60-70.
- 58 McLuckey, S.A., Glish, G.L., Asano, K.G., Bartmess, J.E., Protonated Water and Protonated Methanol Cluster Decompositions in a Quadrupole Ion Trap. *International Journal of Mass Spectrometry and Ion Processes*, **1991**. *109*, 171-186.
- 57 McLuckey, S.A., Glish, G.L., Vanberkel, G.J., Charge Determination of Product Ions Formed from Collision-Induced Dissociation of Multiply Protonated Molecules Via Ion Molecule Reactions. *Analytical Chemistry*, **1991**. *63*, 1971-1978.
- 56 Vanberkel, G.J., McLuckey, S.A., Glish, G.L., Preforming Ions in Solution Via Charge-Transfer Complexation for Analysis by Electrospray Ionization Mass-Spectrometry. *Analytical Chemistry*, **1991**. *63*, 2064-2068.
- 55 Goeringer, D.E., Glish, G.L., McLuckey, S.A., Fixed-Wavelength Laser Ionization Tandem Mass-Spectrometry for Mixture Analysis in the Quadrupole Ion Trap. *Analytical Chemistry*, **1991**. *63*, 1186-1192.
- 54 Eckenrode, B.A., McLuckey, S.A., Glish, G.L., Comparison of Electron Ionization and Chemical Ionization Sensitivities in an Ion Trap Mass-Spectrometer. *International Journal of Mass Spectrometry and Ion Processes*, **1991**. *106*, 137-157.
- 53 McLuckey, S.A., Glish, G.L., Vanberkel, G.J., Multiple Stages of Mass-Spectrometry in a Quadrupole Ion Trap Mass-Spectrometer - Prerequisites. *International Journal of Mass Spectrometry and Ion Processes*, **1991**. *106*, 213-235.
- 52 Vanberkel, G.J., McLuckey, S.A., Glish, G.L., Electrospray Ionization of Porphyrins Using a Quadrupole Ion Trap for Mass Analysis. *Analytical Chemistry*, **1991**. *63*, 1098-1109.
- 51 Cooks, R.G., Glish, G.L., McLuckey, S.A., Kaiser, R.E., Ion Trap Mass-Spectrometry. *Chemical & Engineering News*, **1991**. *69*, 26-&.
- 50 McLuckey, S.A., Vanberkel, G.J., Glish, G.L., Huang, E.C., Henion, J.D., Ion Spray Liquid-Chromatography Ion Trap Mass-Spectrometry Determination of Biomolecules. *Analytical Chemistry*, **1991**. *63*, 375-383.
- 49 McLuckey, S.A., Goeringer, D.E., Glish, G.L., Selective Ion Isolation Rejection over a Broad Mass Range in the Quadrupole Ion Trap. *Journal of the American Society for Mass Spectrometry*, **1991**. *2*, 11-21.
- 48 Vanberkel, G.J., Glish, G.L., McLuckey, S.A., High-Pressure Ammonia Chemical Ionization Mass-Spectrometry and Mass-Spectrometry Mass-Spectrometry for Porphyrin Structure Determination. *Energy & Fuels*, **1990**. *4*, 720-729.
- 47 Eckenrode, B.A., Glish, G.L., McLuckey, S.A., Negative-Ion Chemical Ionization in a Quadrupole Ion Trap Using Reagent Anions Injected from an External Ion-Source. *International Journal of Mass Spectrometry and Ion Processes*, **1990**. *99*, 151-167.
- 46 Flurer, R.A., Glish, G.L., McLuckey, S.A., Structures of NO_3^- Formed Via Glow-Discharge in

Atmospheric Gases. *Journal of the American Society for Mass Spectrometry*, **1990**. *1*, 217-224.

- 45 Glish, G.L., McLuckey, S.A., Asano, K.G., Determination of Daughter Ion Formulas by Multiple Stages of Mass-Spectrometry. *Journal of the American Society for Mass Spectrometry*, **1990**. *1*, 166-173.
- 44 McLuckey, S.A., Vanberkel, G.J., Glish, G.L., Reactions of Dimethylamine with Multiply Charged Ions of Cytochrome-C. *Journal of the American Chemical Society*, **1990**. *112*, 5668-5670.
- 43 Vanberkel, G.J., Glish, G.L., McLuckey, S.A., Electrospray Ionization Combined with Ion Trap Mass-Spectrometry. *Analytical Chemistry*, **1990**. *62*, 1284-1295.
- 42 Donohue, D.L., Hulett, L.D., McLuckey, S.A., Glish, G.L., McKown, H.S., Positron Ionization Mass-Spectrometry .1. Instrumentation. *International Journal of Mass Spectrometry and Ion Processes*, **1990**. *97*, 227-236.
- 41 McLuckey, S.A., Glish, G.L., Donohue, D.L., Hulett, L.D., Positron Ionization Mass-Spectrometry .2. Ionization by Fast Positrons. *International Journal of Mass Spectrometry and Ion Processes*, **1990**. *97*, 237-252.
- 40 Donohue, D.L., Hulett, L.D., Eckenrode, B.A., McLuckey, S.A., Glish, G.L., Positron Ionization Mass-Spectrometry - Ionization of Organic-Molecules by Positronium Formation. *Chemical Physics Letters*, **1990**. *168*, 37-40.
- 39 Vanberkel, G.J., Glish, G.L., McLuckey, S.A., Tuinman, A.A., Porphyrin Pyrrole Sequencing - Low-Energy Collision-Induced Dissociation of (M+7h)⁺ Generated Insitu During Ammonia Chemical Ionization. *Analytical Chemistry*, **1990**. *62*, 786-793.
- 38 Louris, J.N., Brodbeltlustig, J.S., Cooks, R.G., Glish, G.L., Vanberkel, G.J., McLuckey, S.A., Ion Isolation and Sequential Stages of Mass-Spectrometry in a Quadrupole Ion Trap Mass-Spectrometer. *International Journal of Mass Spectrometry and Ion Processes*, **1990**. *96*, 117-137.
- 37 McLuckey, S.A., Glish, G.L., Grant, B.C., Simultaneous Monitoring for Parent Ions of Targeted Daughter Ions - a Method for Rapid Screening Using Mass-Spectrometry Mass-Spectrometry. *Analytical Chemistry*, **1990**. *62*, 56-61.
- 36 Glish, G.L., Goeringer, D.E., Asano, K.G., McLuckey, S.A., Laser Desorption Mass-Spectrometry and Ms/Ms with a 3-Dimensional Quadrupole Ion Trap. *International Journal of Mass Spectrometry and Ion Processes*, **1989**. *94*, 15-24.
- 35 McLuckey, S.A., Glish, G.L., Asano, K.G., Coupling of an Atmospheric-Sampling Ion-Source with an Ion-Trap Mass-Spectrometer. *Analytica Chimica Acta*, **1989**. *225*, 25-35.
- 34 Vanberkel, G.J., Glish, G.L., McLuckey, S.A., Tuinman, A.A., Mechanism of Porphyrin Reduction and Decomposition in a High-Pressure Chemical Ionization Plasma. *Journal of the American Chemical Society*, **1989**. *111*, 6027-6035.
- 33 Glish, G.L., McLuckey, S.A., Analyzer Scan Modes for Hybrid Mass Spectrometers. *Organic Mass Spectrometry*, **1989**. *24*, 470-478.
- 32 Vanberkel, G.J., Glish, G.L., McLuckey, S.A., Geoporphyrin Structure Determination Using Chemical Ionization Mass-Spectrometry Mass-Spectrometry. *Organic Geochemistry*, **1989**. *14*, 203-212.
- 31 Glish, G.L., Explosives Detection. *Chemical & Engineering News*, **1989**. *67*, 3-3.
- 30 Glish, G.L., Ftir Vs Gc-Ms, a Vendor Oversight. *Research & Development*, **1989**. *31*, 45-45.
- 29 McLuckey, S.A., Glish, G.L., Asano, K.G., Grant, B.C., Atmospheric Sampling Glow-Discharge Ionization

Source for the Determination of Trace Organic-Compounds in Ambient Air. *Analytical Chemistry*, **1988**. *60*, 2220-2227.

- 28 McLuckey, S.A., Glish, G.L., Asano, K.G., Vanberkel, G.J., Self Chemical Ionization in an Ion Trap Mass-Spectrometer. *Analytical Chemistry*, **1988**. *60*, 2312-2314.
- 27 Buchanan, M.V., Rubin, I.B., Wise, M.B., Glish, G.L., Formation of [M + 14] Anions from Fluorene - Negative-Ion Ci Studies Using Gc Ms, Ms Ms and Ftms. *Biomedical and Environmental Mass Spectrometry*, **1987**. *14*, 395-399.
- 26 McLuckey, S.A., Glish, G.L., Kelley, P.E., Collision-Activated Dissociation of Negative-Ions in an Ion Trap Mass-Spectrometer. *Analytical Chemistry*, **1987**. *59*, 1670-1674.
- 25 McLuckey, S.A., Glish, G.L., Dished Peaks from Collision-Induced Dissociations of Nitroaromatic Anions. *International Journal of Mass Spectrometry and Ion Processes*, **1987**. *76*, 41-46.
- 24 Glish, G.L., McLuckey, S.A., McKown, H.S., Improved Performance of a Tandem Quadrupole Time-of-Flight Mass-Spectrometer. *Analytical Instrumentation*, **1987**. *16*, 191-206.
- 23 McLuckey, S.A., Glish, G.L., The Effect of Charge on Hydroxyl Loss from Ortho-Substituted Nitrobenzene Ions. *Organic Mass Spectrometry*, **1987**. *22*, 224-228.
- 22 Glish, G.L., McLuckey, S.A., McBay, E.H., Bertram, L.K., Design and Performance of a Hybrid Mass-Spectrometer of Qeb Geometry. *International Journal of Mass Spectrometry and Ion Processes*, **1986**. *70*, 321-338.
- 21 Glish, G.L., McLuckey, S.A., High-Resolution Detection of Daughter Ions with a Hybrid Mass-Spectrometer. *Analytical Chemistry*, **1986**. *58*, 1887-1889.
- 20 Glish, G.L., McLuckey, S.A., Hybrid Instruments for Mass-Spectrometry Mass-Spectrometry. *Analytical Instrumentation*, **1986**. *15*, 1-36.
- 19 Brown, A.J., Glish, G.L., McBay, E.H., Snyder, F., Alkyldihydroxyacetonephosphate Synthase Mechanism - O-18 Studies of Fatty-Acid Release from Acyldihydroxyacetone Phosphate. *Biochemistry*, **1985**. *24*, 8012-8016.
- 18 McLuckey, S.A., Glish, G.L., Carter, J.A., The Analysis of Explosives by Tandem Mass-Spectrometry. *Journal of Forensic Sciences*, **1985**. *30*, 773-788.
- 17 Glish, G.L. , Goeringer, D.E., Tandem Quadrupole-Time-of-Flight Instrument for Mass-Spectrometry Mass-Spectrometry. *Analytical Chemistry*, **1984**. *56*, 2291-2295.
- 16 Todd, P.J., Glish, G.L., Christie, W.H., A Molecular Secondary Ionization Source for Use with a High-Performance Tandem Mass-Spectrometer. *International Journal of Mass Spectrometry and Ion Processes*, **1984**. *61*, 215-230.
- 15 Glish, G.L., Todd, P.J., Busch, K.L., Cooks, R.G., Ms Ms Spectra of Organic Ions Generated by Secondary Ion Mass-Spectrometry. *International Journal of Mass Spectrometry and Ion Processes*, **1984**. *56*, 177-192.
- 14 Glish, G.L., McBay, E.H., Goodman, M.M., Knapp, F.F., The Fragmentation of Chalcogen Containing Fatty-Acids and Their Methyl-Esters. *Biomedical Mass Spectrometry*, **1983**. *10*, 572-576.
- 13 Cooks, R.G., Busch, K.L., Glish, G.L., Mass-Spectrometry - Analytical Capabilities and Potentials. *Science*, **1983**. *222*, 273-291.
- 12 Glish, G.L., Smith, D.H., Thermal Ionization of Quaternary Ammonium-Salts. *International Journal of*

Mass Spectrometry and Ion Processes, **1983**. *50*, 143-149.

- 11 Gentry, R.V., Glish, G.L., McBay, E.H., Differential Helium Retention in Zircons - Implications for Nuclear Waste Containment. *Geophysical Research Letters*, **1982**. *9*, 1129-1130.
- 10 Glish, G.L., Todd, P.J., Collision Region for Mass-Spectrometry Mass-Spectrometry. *Analytical Chemistry*, **1982**. *54*, 842-843.
- 9 Glish, G.L., McLuckey, S.A., Ridley, T.Y., Cooks, R.G., A New Hybrid Sector Quadrupole Mass-Spectrometer for Mass-Spectrometry Mass-Spectrometry. *International Journal of Mass Spectrometry and Ion Processes*, **1982**. *41*, 157-177.
- 8 Cooks, R.G., Glish, G.L., Mass-Spectrometry Mass-Spectrometry. *Chemical & Engineering News*, **1981**. *59*, 40-52.
- 7 McLuckey, S.A., Glish, G.L., Cooks, R.G., Kinetic-Energy Effects in Mass-Spectrometry Mass-Spectrometry Using a Sector-Quadrupole Tandem Instrument. *International Journal of Mass Spectrometry and Ion Processes*, **1981**. *39*, 219-230.
- 6 Burinsky, D.J., Glish, G.L., Cooks, R.G., Zwinselman, J.J., Nibbering, N.M.M., Unimolecular Dissociations at Short Times - a Comparison of Angle-Resolved Mass-Spectrometry and Field-Ionization Kinetics. *Journal of the American Chemical Society*, **1981**. *103*, 465-467.
- 5 Glish, G.L., Hemberger, P.H., Cooks, R.G., Ion Structure Determinations and Ion-Molecule Reactions by Double Quadrupole Mass-Spectrometry. *Analytica Chimica Acta*, **1980**. *119*, 137-144.
- 4 Glish, G.L., Cooks, R.G., Direct Analysis of Mixtures by Double Quadrupole Mass-Spectrometry. *Analytica Chimica Acta*, **1980**. *119*, 145-148.
- 3 Maquestiau, A., Flammang, R., Glish, G.L., Laramée, J.A., Cooks, R.G., Kinetic-Energy Release and Ion Structure - [C₆H₆O]⁺. *Organic Mass Spectrometry*, **1980**. *15*, 131-133.
- 2 Glish, G.L., Shaddock, V.M., Harmon, K., Cooks, R.G., Rapid Analysis of Complex-Mixtures by Mass-Spectrometry Mass-Spectrometry. *Analytical Chemistry*, **1980**. *52*, 165-167.
- 1 Glish, G.L., Cooks, R.G., Fischer Indole Synthesis and Pinacol Rearrangement in Mass-Spectrometer. *Journal of the American Chemical Society*, **1978**. *100*, 6720-6725.

Books and Book Chapters

K.L. Busch, G.L. Glish, S.A. McLuckey, *Mass Spectrometry/Mass Spectrometry: Techniques and Applications of Tandem Mass Spectrometry*, VCH Publishers, Inc.: New York, 1988, 333pp.

S.A. McLuckey, G.J. Van Berkel, D.E. Goeringer, G.L. Glish, *Electrospray Ionization*, in Practical Aspects of Ion Trap Mass Spectrometry, Vol. II, R.E. March, J.F.J. Todd, eds. CRC Press, Boca Raton, FL, 1995, pp. 89-141.

M.J. Charles, G.L. Glish, *Review of Modern Ion Trap Research*, in Practical Aspects of Ion Trap Mass Spectrometry, Vol. III, R.E. March, J.F.J. Todd, eds. CRC Press, Boca Raton, FL, 1995, pp. 90-118.

P.M. Remes, G.L. Glush, *Collisional Cooling in the Quadrupole Ion Trap Mass Spectrometer (QITMS)*, in Practical Aspects of Trapped Ion Mass Spectrometry, Volume IV: Theory and Instrumentation, R.E. March, J.F.J. Todd, eds. CRC Press, Boca Raton, Fl., 2010.

Patents

U.S. Patent No. 4,849,628, *Atmospheric Sampling Glow Discharge Ionization Source*.
U.S. Patent No. 5,206,509, *Universal Collisional Activation Ion Trap Mass Spectrometry*
U.S. Patent No. 6,703,611, *Electrospray Ionization Device*
U.S. Patent No. 7,227,133, *Methods and Apparatus for Electron or Positron Capture Dissociation*
U.S. Patent No. 7,514,674, *Octapole ion trap mass spectrometers and related methods*

Ph.D. Students

Richard W. Vachet – 1997
Tong Lin – 1997
John D. Lennon III – 1998
Michael R. Asam – 1998
Julia E. Wingate – 2000
Kenneth L. Ray – 2000
Anne H. Payne – 2001
Allison S. Danell – 2001
Ryan M. Danell – 2001
Christina N. Dalton – 2002
Christy S. Raska – 2003
Sara C. McGrath – 2003
Alawee H. Racine – 2005
David M. Black – 2005
Desmond A. Kaplan – 2006
Connell Cunningham – 2006
Phillip M. Remes – 2007
Karen M. Wendling – 2008
Jared M. Bushey – 2008
Travis Falconer – 2008
G. Asher Newsome – 2009
Atim A. Enyenihi – 2010
Mark E. Ridgeway – 2010
Natalie J. Thompson – 2010