

# CURRICULUM VITAE

## as of 2/19/19

**Kristina Håkansson**

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- 1996-2000 **Ph.D.**, *Molecular Biotechnology*, Uppsala University, Sweden. *Thesis*: “Method and Technique Development in Peptide and Protein Mass Spectrometry” with Prof. Per Håkansson (not related)
- 1991-1996 **M.Sc. (BS/MS program)**, *Molecular Biotechnology*, Uppsala University School of Engineering, Sweden. *Thesis*: “On the Feasibility of Building Nanometer-scale Structures Based on DNA Strands and Imaging these Structures with Atomic Force Microscopy” with Profs. Bo Sundqvist and Ulf Landegren

### POSITIONS

- 2013- **Professor**, Department of Chemistry, University of Michigan, Ann Arbor, MI
- 2009-2013 **Associate Professor**, Department of Chemistry, University of Michigan, Ann Arbor, MI
- 2010 **Visiting Professor**, Life Sciences Institute, University of Michigan, Ann Arbor, MI
- 2005-2008 **Dow Corning Assistant Professor**, Department of Chemistry, University of Michigan, Ann Arbor, MI
- 2003-2009 **Assistant Professor**, Department of Chemistry, University of Michigan, Ann Arbor, MI
- 2000-2003 **Postdoctoral Fellow**, Ion Cyclotron Resonance Program, National High Magnetic Field Laboratory/Florida State University, Tallahassee, FL with Prof. Alan G. Marshall
- 1998-2000 **Consultant**, Hewlett Packard Chemical Analysis (currently Agilent Technologies), Kista, Sweden

### AWARDS/RECOGNITION

- 2018 Agilent Technologies Thought Leader Award
- 2017 Hach Lecturer, University of Wyoming
- 2016 Biemann Medal, American Society for Mass Spectrometry
- 2009 Top 54 Contributor to the *Journal of the American Society for Mass Spectrometry* (1990-2009)
- 2006-2011 National Science Foundation CAREER Award
- 2005-2007 Eli Lilly Analytical Chemistry Award
- 2005-2008 Dow Corning Assistant Professorship, University of Michigan
- 2005 American Society for Mass Spectrometry Research Award
- 2004 Elisabeth Caroline Crosby Research Award, University of Michigan
- 2004-2007 Searle Scholar Award
- 2000-2002 Swedish Foundation for International Cooperation in Research and Higher Education (STINT) postdoctoral fellow
- 2000 “Wallinpremiet” at Västmanlands-Dala student Nation, Uppsala, Sweden after Ph.D. degree
- 1996 “Bröderna Molanders Stiftelse” after M.Sc. degree

## RESEARCH INTERESTS

Fourier transform ion cyclotron resonance (FT-ICR) mass spectrometry for biomolecular identification and structural characterization:

- Characterization of nucleic acid structure through gas-phase ion-electron reactions, e.g., electron capture dissociation (ECD), negative ion electron capture dissociation (niECD, discovered in the Hakansson laboratory), and electron detachment dissociation (EDD), and gas-phase hydrogen exchange.
- Identification and characterization of protein posttranslational modifications by complementary fragmentation techniques such as ECD/niECD and infrared multiphoton dissociation (IRMPD) at low (fmol) levels.
- Exploration of the gas-phase fragmentation behavior of biomolecules following ion-electron reactions.
- Application of ion-electron and ion-photon reactions in cancer glycomics.
- Probing covalent intermediates in the catalysis of non-ribosomal peptide synthetases and polyketide synthases by FT-ICR mass spectrometry.
- Targeted proteomics of natural product biosynthetic enzymes.
- Mapping macromolecular contact surfaces by solution-phase hydrogen/deuterium exchange (tandem) mass spectrometry.

## CURRENT COLLABORATORS

**Prof. Phillip Andrews**, Department of Biological Chemistry, University of Michigan (sulfoproteomics)

**Prof. Aaron Frank**, Department of Chemistry, University of Michigan (computational studies of gas-phase biomolecules)

**Prof. Markos Koutmos**, Department of Chemistry, University of Michigan (RNA-protein cross-linking)

**Prof. Brent Martin**, Department of Chemistry, University of Michigan (targeted proteomics of cystine oxidation)

**Prof. Alexey Nesvizhskii**, Department of Pathology, University of Michigan (bioinformatics for data-independent LC/MS based on targeted IR laser depletion of phosphopantetheinylated peptides)

**Prof. Brandon T. Ruotolo**, Department of Chemistry, University of Michigan (ion mobility/mass spectrometry of RNA and metal-adducted glycans)

**Prof. David H. Sherman**, Department of Medicinal Chemistry, University of Michigan (probing the catalysis of polyketide synthases/nonribosomal peptide synthetases)

**Prof. Janet L. Smith**, Department of Biological Chemistry, University of Michigan (probing the structure of polyketide synthases/nonribosomal peptide synthetases)

**Prof. Lois Weisman**, Department of Cellular and Developmental Biology, University of Michigan (novel mass spectrometry methods for phosphoinositide lipid analysis)

## TEACHING EXPERIENCE

### *COURSES DEVELOPED*

2007-2018     **CHEM 647. “Mass Spectrometry”** Graduate course (3 credits), University of Michigan (taught six times; Winter 2007, Winter 2008, Fall 2009, Fall 2011, Fall 2015, and Fall 2018)

2006         **CHEM 755. “Advanced Analytical Chemistry”** Graduate course (2 credits), University of Michigan

2004         **BIOINF 800. “Special Topics in Bioinformatics: Proteome Informatics”** Graduate course, University of Michigan, developed and team taught with six other faculty members.

1998-2000    **“Liquid Chromatography/Mass Spectrometry Fundamentals”** Three-day course organized by Hewlett Packard Chemical Analysis, Sweden (currently Agilent)

Technologies), given seven times. Developed the format and contents of the course together with one other graduate student and two HP representatives, wrote course material, taught seven lectures and computer labs.

1998-1999 **”Liquid Chromatography/Mass Spectrometry of Peptides and Proteins”** One-day course organized by Hewlett Packard Chemical Analysis, Sweden, given twice. Developed format and contents of the course together with one HP representative, taught four lectures and computer labs.

### ***COURSES TAUGHT***

2006-2017 **CHEM 447. “Physical Methods of Analysis”** Undergraduate lecture course (3 credits), University of Michigan (taught six times; Fall 2006, Fall 2007, Winter 2009, Winter 2011, Fall 2016, and Fall 2017)

2012-2014 **CHEM 242. “Analysis Lab”** Undergraduate laboratory course (2 credits), University of Michigan (seven times; two sections in Winter 2012, Winter 2013, Fall 2013, Winter 2014, Winter 2015; one section in Fall 2012, Fall 2014). In Fall 2013, I implemented a requested format change from 2x3h/week to 1x4h/week and developed a new 2-week microfluidics lab as part of this course.

2008 **Chemistry/Biophysics 454. “Biophysical Chemistry, Part II: Macromolecular Structure and Dynamics”** Undergraduate lecture course (3 credits), University of Michigan, one lecture

2007-2008 **ChemBio 602. “Critical Analysis II”** Graduate literature course, University of Michigan, two papers/occasions (taught twice)

2007 **Biophysics 521. “Physical Methods for the Study of Biomacromolecules”** Graduate course, University of Michigan, five 90 min lectures and 25% of exam

2005-2006 **CHEM 801. “Analytical Seminar”** Graduate course (2 credits), University of Michigan

2005-2006 **BIOINF 551. “Proteome Informatics”** Graduate course, University of Michigan, two lectures (taught twice)

2003-2005 **CHEM 480. “Physical and Instrumental Chemistry”** Senior laboratory course (3 credits), University of Michigan (taught three times)

2001 **“Mass Spectrometry”** Graduate course, Florida State University. Guest lecturer

1998 **“Integrated Separation Mass Spectrometry”** Graduate course, Uppsala University. Taught four lectures and one laboratory practical, and wrote exam questions.

1997 **“Integrated Mass Spectrometry”** Course for Scientists in Biology, Medicine and Pharmacy, Uppsala University. Taught one lecture and one laboratory.

### ***STUDENT/RESEARCH STAFF ADVISING***

#### *Research Investigator*

2014- **Dr. Hye Kyong Kweon**, Ph.D. University of Michigan (joint with Philip Andrews, UM Biological Chemistry)

#### *Postdoctoral Fellows*

2017- **Dr. Isaac Agyekum**, Ph.D. University of Georgia

2016- **Dr. Nicholas Borotto** (joint with Brent Martin, UM Chemistry), Ph.D. University of Massachusetts Amherst

2012-2013 **Dr. Ruben T. Almaraz (minority student)**, Ph.D. University of California, Davis

2006-2008 **Dr. Jason W. Kieltyka**, Ph.D. Wayne State University (currently Senior Scientist, Abbott Labs)

2005-2007 **Dr. Haichuan Liu**, Ph.D. The Hong Kong University of Science and Technology (currently Product Support Engineer, Thermo Fisher Scientific)

- 2005-2006 **Dr. Gabriela Grigorean**, Ph.D. University of California, Davis (currently Senior Research Lab Specialist, University of Michigan)
- 2004-2005 **Dr. Gabriella M. Dahlgren**, Ph.D. University of Michigan (currently Manager, Analytical Sciences and Technology, The Janssen Pharmaceutical Companies of Johnson & Johnson)

*UM African Scholars Program – Research Co-Mentor (with Prof. Philip Andrews)*

- 2012-2013 **Mercy Badu**, Department of Chemistry, Kwame Nkrumah University of Science and Technology (KNUST), Ghana

*Ph.D. Students - Research Advisor*

**Carson Szot**, Analytical Chemistry, University of Michigan (2018-)

**Eunju Jang**, Analytical Chemistry, University of Michigan (2017-)

**Nhat Le**, Analytical Chemistry, University of Michigan (2017-)

**Qingyi (Emma) Wang**, Analytical Chemistry, University of Michigan (2013-)

**Dr. Kevin Ileka**, Analytical Chemistry, University of Michigan (2012-2017; currently Research Investigator/Process Analytical Chemist, Bristol-Myers Squibb). *Thesis*: “Structural Characterization of Ribonucleic Acids and their Complexes by Negative Ion Mode Mass Spectrometry”

**Dr. Phillip McClory**, Analytical Chemistry, University of Michigan (2012-2017; currently Postdoctoral Scientist, Eli Lilly and Company). *Thesis*: “Optimization of Acidic Post-translational Modification Detection and Natural Product Biosynthetic Enzyme Analysis with Dual Polarity nLC/FT-ICR Mass Spectrometry”

**Dr. Tao Jiang**, Analytical Chemistry, University of Michigan (2011-2016; currently Scientist, Moderna Therapeutics). *Thesis*: “High Resolution Peptide Tandem Mass Spectrometry: Alternative Charge Carriers in Electron-based Activation Methods and Improved Antibody Sequence Variant Analysis”

**Dr. Wendi A. Hale**, Analytical Chemistry, University of Michigan (2010-2015; currently LC/MS Applications Scientist, Agilent Technologies). *Thesis*: “Quantitative Bottom-Up and Top-Down LC/FT-ICR MS for Multisite Phosphoproteins and Natural Product Biosynthetic Pathways”

**Dr. Ning Wang**, Analytical Chemistry, University of Michigan (2009-2014; currently Research Scientist, Eli Lilly and Company). *Thesis*: “Negative Ion Electron Capture Dissociation (niECD): a Novel Tandem Mass Spectrometric Technique”

**Dr. Di Gao**, Analytical Chemistry, University of Michigan (2008-2013; currently Scientist, AstraZeneca). *Thesis*: “Novel Tandem Mass Spectrometry (MS/MS) Approaches for Structural Characterization of Glycans”

**Dr. Katherine E. Hersberger**, Analytical Chemistry, University of Michigan (2005-2012; currently Clinical Researcher, University of Michigan). *Thesis*: “Metal-Oxide Enrichment and Gas-Phase Characterization of Sulfopeptides using Fourier Transform Ion Cyclotron Resonance Mass Spectrometry”

**Dr. Hangtian Song**, Analytical Chemistry, University of Michigan (2006-2011; currently Research Investigator, Bristol-Myers Squibb). *Thesis*: “Novel Fourier Transform Ion Cyclotron Resonance Mass Spectrometric Strategies for Peptide Nucleic Acids and Acidic Biomacromolecules: Qualitative Characterization and Quantification”

**Dr. Wen Zhou**, Materials/Analytical Chemistry, University of Michigan (2006-2011; currently Mass Spectrometry Platform Manager/Engineer, Peking University). *Thesis*: “Gas-phase Ion-electron and Ion-photon Reactions for Structural Characterization of Protein Glycosylation”

**Dr. Christopher M. Rath**, Chemical Biology, University of Michigan (2006-2011; currently Scientist II, AbSci). *Thesis*: “Fourier Transform Ion Cyclotron Resonance Mass Spectrometry for Identifying and Interrogating Natural Product Biosynthetic Pathways” (co-advisor with Prof. David H. Sherman, Medicinal Chemistry/Life Sciences Institute).

**Dr. Bo Wang**, Analytical Chemistry, University of Michigan (2005-2010; currently Senior Investigator, Nanjing Xintrum Pharmaceuticals). *Thesis*: “Multiplexed Mass Spectrometric Approaches for Protein Cross-Linking Analysis and Protein Functional Studies”

**Dr. Hyun Ju Yoo**, Analytical Chemistry, University of Michigan (2005-2010; currently Research Scientist, ASAN Medical Center). *Thesis*: “Development of Novel Tandem Mass Spectrometric Strategies towards LC/FT-ICR MS-Based Structural Determination in Metabolomic and Peptidomic Analysis”

**Dr. Anastasia Kalli**, Chemical Biology, University of Michigan (2003-2008; currently Strategic Marketing Specialist, Thermo Fisher Scientific). *Thesis*: “Protein and Lantibiotic Sequencing by Gas Phase Dissociation Involving Vibrational Excitation and Ion Electron Reactions”

**Dr. Julie T. Adamson**, Analytical Chemistry, University of Michigan (2003-2008; currently Associate Director of Analytical Development, Takeda Pharmaceuticals). *Thesis*: “Structural Characterization of Protein Glycosylation Utilizing Fragmentation from Gas Phase Ion-Electron Reactions and Vibrational Excitation”

**Dr. Jingjie Mo**, Chemical Biology, University of Michigan (2003-2008; currently Associate Director, Johnson & Johnson). *Thesis*: “Characterization of Nucleic Acid Non-Covalent Interactions by Fourier Transform Ion Cyclotron Resonance Tandem Mass Spectrometry and Gas-Phase Hydrogen/Deuterium Exchange”

**Dr. Jiong Yang**, Materials/Analytical Chemistry, University of Michigan (2002-2007; currently Associate Principal Scientist, Merck Inc.). *Thesis*: “Gas-Phase Nucleic Acid Ion-Electron Reactions: Implementation, Characterization, Fragmentation Pathways, and Mechanistic Aspects”

**Dr. Hye Kyong Kweon**, Analytical Chemistry, University of Michigan (2002-2007; currently Research Investigator, University of Michigan). *Thesis*: “Gas-Phase Ion-Electron Reactions for Characterization of Protein Phosphorylation and Protein Structure”

#### *M.S. Students – Research Advisor*

**Jordan C. Ernst**, Analytical Chemistry, University of Michigan (2011-2014)

**Ashley F. Brant**, Analytical Chemistry, University of Michigan (2007-2010, currently Group Leader, NSF International)

**Noah P. Gardner**, Analytical Chemistry, University of Michigan (2007-2008, currently Formulation Scientist, Intellia Therapeutics) (co-advisor with Prof. David H. Sherman, Medicinal Chemistry/Life Sciences Institute)

**Yibing Kong**, Analytical Chemistry, University of Michigan (2006-2008, currently Senior Manager, China Pacific Life Insurance Company)

**Liping Cui**, Chemical Biology, University of Michigan (2004-2006, currently Technology Investment Banking Associate, Barclays)

#### *Graduate Research Rotation Students (one semester project)*

2019 **Brock Juliano**, Chemical Biology, University of Michigan (2018-)

2018 **Chae Kyung Jeon**, Analytical Chemistry, University of Michigan (2018-)

2018 **Kathryn Kulju**, Analytical Chemistry, University of Michigan (2018-)

2018 **Carolina Rojas-Ramirez**, Analytical Chemistry, University of Michigan (2017-)

2018 **Ciara Witt**, Analytical Chemistry, University of Michigan (2017-)

2017 **Jia Shi**, Analytical Chemistry, University of Michigan (2017-2018)

2016 **Daniel Vallejo**, Analytical Chemistry, University of Michigan (2016-)

2014 **Daniel Polasky**, Analytical Chemistry, University of Michigan (2014-)

2014 **Stephen Ferguson** (Rackham Summer Institute), Analytical Chemistry, University of Michigan (2014-2018)

2014 **Yuwei Tian**, Analytical Chemistry, University of Michigan (2013-2018)

2013 **Junqi Wang**, Materials Chemistry, University of Michigan (2013-)

2013 **Ye Guan**, Analytical Chemistry, University of Michigan (2012-2017)  
 2012 **Jiawei Xing**, Analytical Chemistry, University of Michigan (2012-2013)  
 2012 **Dr. Chuan Leng**, Analytical Chemistry, University of Michigan (2011-2016)  
 2011 **Dr. Colleen Dugan**, Analytical Chemistry, University of Michigan (2010-2016)  
 2010 **Dr. Erik Guetschow**, Analytical Chemistry, University of Michigan (2010-2015)  
 2010 **Cynthia Cipolla**, Analytical Chemistry, University of Michigan (2009-2015)  
 2010 **Dr. Shi Jin**, Analytical Chemistry, University of Michigan (2010-2015)  
 2010 **Dr. Ping Guo**, Materials Chemistry, University of Michigan (2010-2014)  
 2009 **Dr. Shuwen Sun**, Analytical Chemistry, University of Michigan (2009-2014)  
 2009 **Dr. Russell Bornschein**, Analytical Chemistry, University of Michigan (2009-2014)  
 2009 **Dr. Linjie Han**, Analytical Chemistry, University of Michigan (2009-2014)  
 2009 **Dr. Yueyang Zhong**, Analytical Chemistry, University of Michigan (2008-2013)  
 2009 **Dr. Jing Nie**, Analytical Chemistry, University of Michigan (2008-2013)  
 2008 **Dr. Neil D. Hershey**, Analytical Chemistry, University of Michigan (2008-2013)  
 2007 **Dr. Peng Song**, Analytical Chemistry, University of Michigan (2007-2012)  
 2007 **Dr. Gabrielle C. Todd**, Chemical Biology, University of Michigan (2006-2011)  
 2006 **Dr. Meng Wang**, Analytical Chemistry, University of Michigan (2006-2011)  
 2006 **Shujiang (Suzie) Cheng**, Materials/Analytical Chemistry, University of Michigan (2005-2006)  
 2005 **Tse-An (Joanne) Chen**, Chemical Biology, University of Michigan (2005-2007)  
 2005 **Tengteng Peng**, Chemical Biology, University of Michigan (2005-2006)  
 2003 **Dr. Kristin N. Schultz**, Analytical Chemistry, University of Michigan (2003-2009)

*Ph.D. Thesis Committees, Chemistry*

**Yilin Han**, Analytical Chemistry (Ruotolo), University of Michigan (2017-)  
**LeeAnne Wang**, Analytical Chemistry (Kennedy), University of Michigan (2017-)  
**Kristine Parson**, Analytical Chemistry (Ruotolo), University of Michigan (2017-)  
**Carolina Rojas-Ramirez**, Analytical Chemistry (Ruotolo), University of Michigan (2017-)  
**Shane Wells**, Analytical Chemistry (Kennedy), University of Michigan (2016-)  
**Daniel Vallejo**, Analytical Chemistry (Ruotolo), University of Michigan (2016-)  
**Kelcie Zegalia**, Analytical Chemistry (Kennedy), University of Michigan (2016-)  
**Stephanie Chun**, Chemical Biology (Narayan), University of Michigan (2015-)  
**Joshua Doverspike**, Analytical Chemistry (Meyerhoff), University of Michigan (2015-)  
**Chunyi Zhao**, Analytical Chemistry (Ruotolo), University of Michigan (2015-)  
**Stephen McNamara**, Analytical Chemistry (Pratt), University of Michigan (2014-)  
**Sugyan Dixit**, Analytical Chemistry (Ruotolo), University of Michigan (2014-)  
**Dr. Stephen Ferguson**, Analytical Chemistry (Meyerhoff), University of Michigan (2014-2018)  
**Daniel Polasky**, Analytical Chemistry (Ruotolo), University of Michigan (2014-)  
**Daniel Steyer**, Analytical Chemistry (Kennedy), University of Michigan (2014-)  
**Dr. Yuwei Tian**, Analytical Chemistry (Ruotolo), University of Michigan (2013-2018)  
**Ryan Cook**, Analytical Chemistry (Pratt), University of Michigan (2015-2017)  
**Joanna Thielen**, Analytical Chemistry (Kennedy), University of Michigan (2011-2014)  
**Dr. Jenny-Marie Wong**, Analytical Chemistry (Kennedy), University of Michigan (2011-2016)  
**Dr. Colleen Dugan**, Analytical Chemistry (Kennedy), University of Michigan (2010-2016)  
**Dr. Chuan Leng**, Analytical Chemistry (Chen), University of Michigan (2011-2016)  
**Dr. Shuai Niu**, Analytical Chemistry (Ruotolo), University of Michigan (2010-2015)  
**Dr. Shi Jin**, Analytical Chemistry (Kennedy), University of Michigan (2010-2015)  
**Dr. Ying Zhou**, Analytical Chemistry (Kennedy), University of Michigan (2009-2015)  
**Dr. Russell Bornschein**, Analytical Chemistry (Ruotolo), University of Michigan (2009-2014)  
**Dr. Shuwen Sun**, Analytical Chemistry (Kennedy), University of Michigan (2009-2014)  
**Dr. Elizabeth Brisbois**, Analytical Chemistry (Meyerhoff), University of Michigan (2009-2014)

**Dr. Linjie Han**, Analytical Chemistry (Ruotolo), University of Michigan (2009-2014)  
**Dr. Lauren Soblosky**, Analytical Chemistry (Chen), University of Michigan (2009-2014)  
**Dr. Andrea Bell**, Analytical Chemistry (Meyerhoff), University of Michigan (2009-2014)  
**Dr. Mahmoud El Azzouny**, Analytical Chemistry (Kennedy), University of Michigan (2010-2013)  
**Dr. Yueyang Zhong**, Analytical Chemistry (Ruotolo), University of Michigan (2008-2013)  
**Dr. Neil D. Hershey**, Analytical Chemistry (Kennedy), University of Michigan (2008-2013)  
**Dr. Zhenxin Lin**, Analytical Chemistry (Lubman), University of Michigan (2008-2013)  
**Dr. Jing Nie**, Analytical Chemistry (Kennedy), University of Michigan (2008-2013)  
**Dr. Stephanie Le Clair**, Analytical Chemistry (Ramamoorthy), University of Michigan (2007-2012)  
**Dr. Billy Clifford-Nunn**, Analytical Chemistry (Andrews), University of Michigan (2007-2012)  
**Dr. Peng Song**, Analytical Chemistry (Kennedy), University of Michigan (2007-2012)  
**Dr. Natalie (Walker) Crist**, Analytical Chemistry (Meyerhoff), University of Michigan (2006-2012)  
**Dr. Matthew Lorentz**, Analytical Chemistry (Kennedy), University of Michigan (2007-2011)  
**Dr. Xiaomu Guan**, Chemical Biology (Fierke), University of Michigan (2006-2011)  
**Dr. Di Si**, Analytical Chemistry (Kopelman), University of Michigan (2004-2011)  
**Dr. Meng Wang**, Analytical Chemistry (Kennedy), University of Michigan (2006-2011)  
**Dr. Christopher Avery**, Analytical Chemistry (Chen), University of Michigan (2005-2010)  
**Tse-An (Joanne) Chen**, Chemical Biology (Andricioaei), University of Michigan (2005-2007)  
**Qihui Ni**, Analytical Chemistry (Kennedy), University of Michigan (2004-2009)  
**Dr. Amy Payeur**, Analytical Chemistry (Sacks/Kennedy), University of Michigan (2004-2010)  
**Dr. Laura Zimmerman**, Analytical Chemistry (Meyerhoff), University of Michigan (2005-2010)  
**Dr. Chen Lee**, Analytical Chemistry (Lubman), University of Michigan (2004-2010)  
**Dr. Qiang Li**, Analytical Chemistry (Kennedy), University of Michigan (2005-2010)  
**Dr. Meng Guo**, Physical Chemistry (Goodson), University of Michigan (2005-2009)  
**Dr. Jian (Rex) Pei**, Analytical Chemistry (Kennedy), University of Michigan (2004-2009)  
**Dr. Dongxuan Shen**, Analytical Chemistry (Meyerhoff), University of Michigan (2003-2009)  
**Dr. Miri Yoon**, Chemical Biology (Marsh), University of Michigan (2004-2009)  
**Dr. Cory Fix**, Analytical Chemistry (Sacks/Meyerhoff), University of Michigan (2003-2009)  
**Dr. Li Yi**, Chemical Biology (Woodard), University of Michigan (2003-2008)  
**Jenny Rush**, Chemical Biology (Glish), University of Michigan (2002-2006)  
**Chetwana Rungwanitcha**, Analytical Chemistry (Kennedy), University of Michigan (M.S. 2008)  
**Dr. Tasneem H. Patwa**, Analytical Chemistry (Lubman), University of Michigan (2003-2008)  
**Dr. Yinghua Qiu**, Analytical Chemistry (Lubman), University of Michigan (2002-2008)  
**Dr. Peter T. Stevens**, Analytical Chemistry (Sacks), University of Michigan (2000-2008)  
**Dr. Yanfei Wang**, Analytical Chemistry (Lubman), University of Michigan (2001-2007)  
**Dr. Manoj Pal**, Analytical Chemistry (Lubman), University of Michigan (2001-2007)  
**Dr. Paweena Kreunin**, Analytical Chemistry (Lubman), University of Michigan (2001-2007)  
(substitute for Prof. Zhan Chen at Ph.D. defense)  
**Dr. Kyu Hwan Park**, Analytical Chemistry (Lubman), University of Michigan (2001-2007)  
**Dr. Jia Zhao**, Analytical Chemistry (Lubman), University of Michigan (2002-2007)  
**Dr. Xiaoyun Chen**, Analytical Chemistry (Chen), University of Michigan (2002-2007)  
**Dr. Wansik Cha**, Analytical Chemistry (Meyerhoff), University of Michigan (2002-2006)  
**Dr. Hui Wei**, Analytical Chemistry (Kennedy), University of Michigan (2001-2006)  
**Dr. Chul Yoo**, Analytical Chemistry (Lubman), University of Michigan (2001-2006)  
**Dr. Cheryl L. Loch**, Materials/Analytical Chemistry (Chen), University of Michigan (2001-2006)  
**Dr. James L. Edwards**, Analytical Chemistry (Kennedy), University of Michigan (2001-2006)  
**Dr. Suping Zheng**, Analytical Chemistry (Lubman), University of Michigan (2000-2006)  
**Dr. Yi Zhu**, Analytical Chemistry (Lubman), University of Michigan (2000-2006)

*Ph.D. Thesis Committees, Other Departments/Programs*

**Dr. Elia Wright**, Biological Chemistry (PIBS), University of Michigan (2010-2016)  
**Dr. Thomas Hudgins**, Earth and Environmental Sciences, University of Michigan (2010-2015)  
**Dr. Dahvid Davda**, Chemical Biology, University of Michigan (2010-2015)  
**Dr. Eli Benchell Eisman**, Chemical Biology, University of Michigan (2008-2013)  
**Dr. Chunchao Zhang**, Bioinformatics, University of Michigan (2007-2013)  
**Dr. S. Marjan Varedi K.**, Chemical Engineering, University of Michigan (2006-2011)  
**Dr. Jerome Quintero**, Biophysics, University of Michigan (2004-2011)  
**Dr. John Conrad**, Chemical Biology, University of Michigan (2006-2011)  
**Dr. Lan (Nancy) Dai**, Bioinformatics, University of Michigan (2004-2011)  
**Dr. Dan Wahl**, Chemical Biology, University of Michigan (2006-2010)  
**Dr. Mark A. Ditzler**, Biophysics, University of Michigan (2002-2008)  
**Dr. Peter Ulintz**, Bioinformatics, University of Michigan (2002-2008; member of candidacy committee)  
**Dr. Chunrong Jia**, Environmental Health Sciences, University of Michigan (2002-2007)

*Undergraduate Students – Research Advisor*

2018-2019 **Abigail Ellis**, University of Michigan Senior, Chemistry 399, research course  
2018 **Lacey Pritchard**, University of Michigan Senior, Chemistry 399, research course  
2016-2017 **Brian Tang**, University of Michigan Junior, Chemistry 399, research course  
2015-2016 **Steven Bourdow**, University of Michigan Junior/Senior, Chemistry 399, research course  
2015-2016 **Alec Rosenbaum**, University of Michigan Junior, Chemistry 399, research course  
2015 **Andrew Davis**, University of Michigan Junior, Chemistry 398, research course  
2014-2015 **Noah Schwandt**, University of Michigan Junior, Chemistry 399, research course  
2013 **Rachel Neumann**, University of Michigan Freshman, Undergraduate Research Opportunity (UROP) student  
2013-2014 **Jordan Stern**, University of Michigan Junior/Senior, Chemistry 399, research course and Summer Undergraduate Research Program (currently in graduate school at University of California, Los Angeles)  
2012 **Xianghang Shangguan**, Peking University, International REU summer student (currently in graduate school at the University of Chicago)  
2011-2012 **Yang Chen**, University of Michigan Junior, Chemistry 398, research course  
2011 **Yilun (Allun) Li**, Peking University, International REU summer student (currently in graduate school at Rice University)  
2011 **Heeyeon (Rory) Kim**, University of Michigan Senior, Chemistry 399, research course.  
2010 **Aamir Uddin**, University of Michigan Senior, Chemistry 399, research course  
2009 **Shuyi Zhuang**, Tsinghua University, International REU summer student (currently Research Associate, Gilead Sciences)  
2008-2009 **Tyler J. Greer**, University of Michigan Junior/Senior, Chemistry 399, research course (Ph.D. (2014) from the University of Wisconsin-Madison)  
2007-2009 **James R. Kornacki**, University of Michigan Junior/Senior, Chemistry 398, research course and Summer Undergraduate Research Program (Ph.D. (2015) from Northwestern University)  
2007 **Jennifer Myaeng**, University of Michigan Senior, Chemistry 398, research course (currently medical training U.S. Army)  
2007 **James P. Grinias**, Eastern Michigan University Junior, REU summer student (currently Assistant Professor, Rowan University)  
2006 **Hannah M. Burleson**, Catawba College Junior, REU summer student  
2005-2006 **Jason Grunewald**, University of Michigan Senior, Chemistry 399, research course



- 2004-2005 **Zubair Giga**, University of Michigan Senior, Chemistry 399, research course (currently Pharmacist, University of Michigan)
- 2004 **Milaris I. Gilbes**, University of Puerto Rico Junior, Summer Research Opportunity Program for minority students
- 2004 **David Mitchell**, University of Michigan Senior, Chemistry 399, research course

## LEADERSHIP/GOVERNANCE

### NATIONAL/INTERNATIONAL

- 2019 External Reviewer, Lecturer to Senior Lecturer, United Kingdom
- 2018- Editorial Board, *Rapid Communications in Mass Spectrometry*
- 2018 External Examiner, Ph.D. thesis, University of Innsbruck, Austria
- 2016, 2018 Ad Hoc Member, Enabling Bioanalytical and Imaging Technologies Study Section, National Institutes of Health
- 2018-2020 Ion Cyclotron Resonance Advisory Committee, National High Magnetic Field Laboratory, Tallahassee, FL
- 2017- External Reviewer, Associate Professor to Professor Promotion cases (3)
- 2017-2018 Nominating Committee, American Society for Mass Spectrometry
- 2016-2018 Research Award Selection Committee, American Society for Mass Spectrometry
- 2016- ANACHEM Award Committee
- 2015 External Reviewer, Tenure & Promotion case
- 2013- Member, Scientific Organizing Committee, Annual International Tandem Mass Spectrometry Workshop at Lake Louise, AB, Canada
- 2012 Member Early-Stage Innovative Technologies (R21) IMAT Panel, National Cancer Institute, National Institutes of Health
- 2012&2015 Member Conflict Panel: Enabling Bioanalytical and Imaging Technologies, National Institutes of Health
- 2012, 2014 Selection Committee, Ron A. Hites Award for an outstanding research publication in the *Journal of the American Society for Mass Spectrometry*
- 2011-2017 Advisory Committee, Boston University Mass Spectrometry Resource.
- 2010, 2014 & 2018 Review Panels, Department of Energy
- 2010, 2011, 2016, 2017 & 2019 Review Panels, National Science Foundation
- 2009-2011 Board of Directors, American Society for Mass Spectrometry
- 2006, 2007, 2009, 2013 & 2019 Session Chair, Annual *ASMS Conference on Mass Spectrometry and Allied Topics*
- 2009 Reviewer, University of Toledo's interdisciplinary research initiation program
- 2009-2014 Editorial Board, *Journal of the American Society for Mass Spectrometry*
- 2008-2011 News & Features Advisory Panel, *Analytical Chemistry*
- 2008 Organizer, invited symposium "Mass Spectrometric Approaches for Structural Analysis of Nucleic Acids and their Complexes" at *The 59th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, New Orleans, LA, March 1-7
- 2008 Reviewer, Natural Sciences and Engineering Research Council of Canada
- 2007-2010 Ion Cyclotron Resonance Advisory Committee and Users Executive Committee, National High Magnetic Field Laboratory, Tallahassee, FL
- 2006&2014 Session Organizer, Anachem Symposium, Livonia, MI
- 2006 Special Emphasis Panel (ZRG1 BCMB-Q 02), Biological Chemistry and Macromolecular Biophysics, National Institutes of Health

2006&2009 Special Emphasis Panel on High End Mass Spectrometers, Shared Instrumentation Program (S10), National Institutes of Health  
 2005-2006 Coordinator, Young Mass Spectrometrists' Interest Group, American Society for Mass Spectrometry  
 2004 Program Committee, *52nd ASMS Conference on Mass Spectrometry and Allied Topics*  
 2004- Ad hoc reviewer, National Science Foundation

***DEPARTMENTAL/UNIVERSITY***

2018- Chair, Facilities Committee, Department of Chemistry, University of Michigan  
 2018- Chair, Launch Committee, Assistant Professor Jena Johnson, Department of Earth and Environmental Sciences, University of Michigan  
 2017- &  
 2006-2008 Admissions Committee, Department of Chemistry, University of Michigan  
 2017-present Member, Tenure/Promotion Committee, Assistant Professor Kristin Koutmou  
 2016-2018 Member, Natural Science Divisional Evaluation Committee, College of Literature, Science, and the Arts, University of Michigan  
 2016-2018 Chair, Promotion Committee, Associate Professor Brandon Ruotolo.  
 2015,  
 2016-2018 Biochemistry Honors Advisor, Department of Chemistry, University of Michigan  
 2015,  
 2016-2018 Chair, Undergraduate Advising Committee, Department of Chemistry, University of Michigan  
 2015 Faculty Search Committee, Department of Chemistry, University of Michigan  
 2013-present Mentor and Chair, Tenure/Promotion Committee, Assistant Professor Kerri Pratt  
 2013 Member, Launch Committee, Assistant Professor Kerri Pratt  
 2013 &  
 2008-2010 Curriculum Committee, Department of Chemistry, University of Michigan  
 2012-2018 Undergraduate Advisor, Department of Chemistry, University of Michigan  
 2010-2015 Executive Committee, Department of Chemistry, University of Michigan  
 2010 Organized (with Prof. Brandon Ruotolo) a one day symposium, sponsored by Bruker Daltonics and Waters, for the Michigan Mass Spectrometry Discussion Group  
 2010-present Member, Tenure/Promotion Committee, Assistant/Associate Professor Julie Biteen  
 2009-2016 Member, Tenure/Promotion Committee, Assistant Professor Brandon Ruotolo  
 2009-2011 Graduate Committee, Department of Chemistry, University of Michigan  
 2008 Machine Shop Hiring Committee, Department of Chemistry, University of Michigan  
 2007, 2011 Selection Committee Fajans Dissertation Awards, Department of Chemistry, University of Michigan  
 2007 Reviewer, Faculty Grants & Awards Program, Office of the Vice President for Research, University of Michigan  
 2007-2009 Chair, Gomberg Lecture Committee, Department of Chemistry, University of Michigan  
 2006-2009 Coordinator, Analytical Chemistry Seminar Series, Department of Chemistry, University of Michigan  
 2006 Faculty panel, Campus Day for Admitted Undergraduates, University of Michigan  
 2005-2009,  
 2016-2017 Technical Services/Facilities Committee, Department of Chemistry, University of Michigan  
 2003-2006 Recruiting Committee, Department of Chemistry, University of Michigan  
 2003-2009 Gomberg Lecture Committee, Department of Chemistry, University of Michigan  
 2003 Speaker, University of Michigan Undergraduate Research Opportunity Program (UROP), October 8

## **OUTREACH**

2018 Instructor (eight 1 hour sessions), 8th graders, Forsythe Middle School  
2017 Career Day Presentation, 7<sup>th</sup> grade, Forsythe Middle School  
2015 Book Bowl Coach, 4<sup>th</sup> grade, Haisley Elementary School  
2013 Science Olympiad Coach, 2<sup>nd</sup> and 3<sup>rd</sup> grade, Haisley Elementary School  
2007-2009 Instructor (three 1 hour sessions), Girls in Science and Engineering (GISE) Summer Camp for 7th and 8th graders, University of Michigan

## **JOURNALS REFEREED**

*The Analyst, Analytica Chimica Acta, Analytical Chemistry, Angewandte Chemie International Edition, Chemical Reviews, Current Pharmaceutical Biotechnology, European Journal of Mass Spectrometry, FEBS Journal (European Journal of Biochemistry), Inorganic Chemistry, International Journal of Mass Spectrometry, Journal of Chromatography A, Journal of Mass Spectrometry, Journal of Physical Chemistry, Journal of Proteome Research, Journal of the American Chemical Society, Journal of the American Society for Mass Spectrometry, Molecular Biosystems, Nature Chemistry, Protein Science, Rapid Communications in Mass Spectrometry, Science*

## **FUNDING**

2018-2021 Agilent Thought Leader Award. \$300,000  
2016-2019 National Science Foundation (CHE-1609840). "Harnessing the Promise of Negative Ion Electron Capture Dissociation (niECD) for Acidic Biomolecule Characterization": \$420,000  
2016-2019 National Institutes of Health (1-S10-GM-107148-01). "Orbitrap Fusion Lumos ETD with IRMPD for UM Chemistry Mass Spectrometry Facility Expansion": \$1,095,180 (no cost extension)  
2014-2020 National Institutes of Health (1-R01-GM-107148-01-A1). "Targeted Proteomic Approaches for Natural Product Biosynthetic Pathway Discovery": \$1,402,648 (no cost extension)  
2012-2015 National Science Foundation (CHE-1152531). "Fundamental and Mechanistic Studies of Negative Ion Electron Capture Dissociation (niECD)": \$400,000  
2010-2014 National Institutes of Health, R21. "Novel Approaches for Structural Determination of Cancer Stem Glycans": \$614,760 - one year no-cost extension  
2008 Center for Computational Medicine and Biology Pilot Project Grant, University of Michigan "Mechanistic Investigation of Single-Molecule Biological Switches Arising from Multi-Site Phosphorylations" (co-PI, PI X. Lin): 25% of a Hakansson graduate student  
2008-2013 National Institutes of Health, R01. "Probing Transcriptional Activation at the Molecular Level" (co-I, PI: A. K. Mapp): 25% of a Hakansson graduate student  
2007 Office of the Vice President for Research/College of LS&A, University of Michigan. "Installation of a Fourier Transform Ion Cyclotron Resonance (FT-ICR) Mass Spectrometer in 2080 Chemistry": \$70,000  
2006 Rackham Graduate School, University of Michigan. "Development of Novel Gas-Phase Tools for Glycoproteomics": \$15,000  
2006-2011 National Science Foundation (CHE-0547699). "CAREER: Probing Nucleic Acid Structure through Gas-Phase Ion-Electron Reactions": \$560,000  
2005-2007 Eli Lilly and Company. (anonymous nomination): \$55,000  
2005-2007 Petroleum Research Fund. "Nucleic Acid Fragmentation from Gas-Phase Ion-Electron Reactions": \$35,000

- 2005-2007 American Society for Mass Spectrometry (Thermo Electron Corporation). “Characterization of Nucleic Acid Structure by Gas-Phase Ion-Electron Reactions”: \$25,000
- 2005 Elisabeth C. Crosby Research Fund. “Tandem High Resolution Mass Spectrometry for Nucleic Acid Structural Characterization”: \$19,710
- 2004-2007 Searle Scholars Program. “Integration of Electron Capture Dissociation and Infrared Multiphoton Dissociation with Proteomics”: \$240,000
- 2000-2002 Swedish Foundation for International Cooperation in Research and Higher Education (STINT). “Implementation, Characterization, and Applications of Electron Capture Dissociation on a High Field Fourier Transform Ion Cyclotron Resonance Mass Spectrometer”: Postdoctoral salary, two return trips Sweden-USA, and \$5,000 for additional expenses

### GROUP FELLOWSHIPS/HONORS

- 2019 Departmental Spring/Summer Fellowship (Nhat Le)
- 2018 Departmental Winter Fellowship (Qingyi Wang)
- 2017 Student speaker award, *11<sup>th</sup> North American FTMS Conference* (Qingyi Wang)
- 2017 Departmental Winter Fellowship (Kevin Ileka)
- 2016 Robert and Carolyn Buzzard Graduate Chemistry Student Leadership Award (Kevin Ileka)
- 2016 Departmental Winter Fellowship (Phillip McClory)
- 2015 Poster Award, Michigan Mass Spectrometry Discussion Group (Phillip McClory)
- 2015 Student speaker award, *10<sup>th</sup> North American FTMS Conference* (Kevin Ileka)
- 2015 Departmental Winter Fellowship (Tao Jiang)
- 2014 George Ashworth Analytical Chemistry Fellowship (Wendi Hale)
- 2014 Vaughan Symposium Poster Travel Award (Phillip McClory)
- 2014 Procter & Gamble Travel Award (Wendi Hale)
- 2014 Departmental Winter Fellowship (Wendi Hale)
- 2013 Student Travel Award, *Lake Louise Tandem Mass Spectrometry Workshop* (Ning Wang)
- 2013 Milton Tamres Outstanding Teaching Award (Wendi Hale)
- 2013 Student speaker award, *9<sup>th</sup> North American FTMS Conference* (Wendi Hale)
- 2013 Departmental Winter Fellowship (Di Gao)
- 2012 Margaret & Herman Sokol Graduate Summer Research Fellowship (Ning Wang)
- 2012 Summer Internship, Genentech (Di Gao)
- 2012 Student Travel Award, *9<sup>th</sup> Uppsala Conference (UPPCON) on Electron Capture and Transfer Dissociation* (Ning Wang)
- 2012 Departmental Winter Fellowship (Ning Wang)
- 2011 Student speaker award, *8<sup>th</sup> North American FTMS Conference* (Ning Wang)
- 2011 Summer Internship, Genentech (Hangtian Song)
- 2011 Student Travel Award, *8<sup>th</sup> Uppsala Conference (UPPCON) on Electron Capture and Transfer Dissociation* (Katherine Hersberger)
- 2011 Departmental Winter Fellowship (Hangtian Song)
- 2010 Oral Presentation Award, *Anachem/SAS Symposium* (Katherine Hersberger)
- 2010 Outstanding Oral Presentation Award, *6<sup>th</sup> Annual Midwest Carbohydrate and Glycobiology Symposium* (Di Gao)
- 2010 Summer Internship, Abbott Labs (Wen Zhou)
- 2010 George Ashworth Analytical Chemistry Fellowship (Hangtian Song)
- 2010 Departmental Winter Fellowship (Hyun Ju Yoo)
- 2010 Rackham One-Term Dissertation Fellowship (Bo Wang)
- 2009 George Ashworth Analytical Chemistry Fellowship (Wen Zhou)

- 2009 Undergraduate Student Poster Award, *57th ASMS Conference on Mass Spectrometry and Allied Topics* (James Kornacki)
- 2008 Poster Award, Honorable Mention, *Perspectives in Chemistry Research at the University of Michigan (PECRUM)* (Bo Wang).
- 2008 Selected Speaker and Travel Award, *Perspectives in Chemistry Research at the University of Michigan (PECRUM)* (Wen Zhou).
- 2008-2010 Microfluidics in Biomedical Sciences Training Grant (Chris Rath)
- 2008 George Ashworth Analytical Chemistry Fellowship (Hyun Ju Yoo)
- 2008 Smeaton Award for Undergraduate Summer Research (James Kornacki)
- 2008 Rackham One-Term Dissertation Fellowship (Anastasia Kalli)
- 2008 Pfizer Analytical Travel Award (Hangtian Song)
- 2007-2008 Chemistry Biology Interface Training Grant (Chris Rath)
- 2007 George Ashworth Analytical Chemistry Fellowship (Jingjie Mo)
- 2007-2008 Rackham Predoctoral Fellowship (Julie Adamson)
- 2006 Florence Fenwick Outstanding Graduate Student Instructor Award (Jiong Yang)
- 2006 Milton Tamres Outstanding Teaching Award (Julie Adamson)
- 2006 Eastman Chemical Company Summer Fellowship (Julie Adamson)
- 2005 Procter & Gamble Travel Award (Jiong Yang)
- 2005 ADVANCE Travel Grant (Gabriella Dahlgren)

## PROFESSIONAL AFFILIATIONS

American Chemical Society, American Chemical Society Analytical Division, American Society for Mass Spectrometry, International Mass Spectrometry Society, Anachem

## PUBLICATIONS

92. Wang, Q; Borotto, N. B.; **Håkansson, K.** Gas-Phase Hydrogen/Deuterium Scrambling in Negative-Ion Mode Tandem Mass Spectrometry *J. Am. Soc. Mass Spectrom.* **2019**, in press.
91. Borotto, N. B.; Ilekka, K. M.; Tom, C. M. B. T.; Martin, B. R.; **Håkansson, K.** Free Radical Initiated Peptide Sequencing for Direct Site Localization of Sulfation and Phosphorylation with Negative Ion Mode Mass Spectrometry. *Anal. Chem.* **2018**, *90*, 9682-9686.
90. McClory, P. J.; **Håkansson, K.** Corona Discharge Suppression in Negative Ion Mode Nanoelectrospray Ionization via Trifluoroethanol Addition. *Anal. Chem.* **2017**, *89*, 10188-10193.
89. Borotto, N. B.; McClory, P. J.; Martin, B. R.; **Håkansson, K.** Targeted Annotation of S-Sulfonylated Peptides by Selective Infrared Multiphoton Dissociation Mass Spectrometry. *Anal. Chem.* **2017**, *89*, 8304-8310.
88. Khare, D.; Hale, W. A.; Tripathi, A.; Gu, L.; Sherman, D. H.; Gerwick, W. H.; **Håkansson, K.**; Smith, J. L. Structural Basis for Cyclopropanation by a Unique Enoyl-Acyl Carrier Protein Reductase. *Structure*, **2015**, *23*, 2213-2223.
87. Whicher, J. R.; Dutta, S.; Hansen, D. A.; Hale, W. A.; Chemler, J. A.; Narayan, A. R.; **Håkansson, K.\***; Sherman, D. H.\*; Smith, J. L.\*; Skinnotis, G.\* Structural Rearrangements of a Polyketide Synthase Module during its Catalytic Cycle. *Nature*, **2014**, *510*, 560–564.
86. Dutta, S.; Whicher, J. R.; Hansen, D. A.; Hale, W. A.; Chemler, J. A.; Narayan, A. R.; **Håkansson, K.**; Sherman, D. H.; Smith, J. L.; Skinnotis, G. Structure of a Modular Polyketide Synthase. *Nature*, **2014**, *510*, 512–517.
85. Zhou, W.; **Håkansson, K.** Electron Capture Dissociation of Divalent Metal-adducted Sulfated N-Glycans Released from Bovine Thyroid Stimulating Hormone. *J. Am. Soc. Mass Spectrom.* **2013**, *24*, 1798-1806.
84. Kornacki, J. R. (undergraduate author); Adamson, J. T.; **Håkansson, K.** Electron Detachment Dissociation of Underivatized Chloride-Adducted Oligosaccharides. *J. Am. Soc. Mass Spectrom.* **2012**, *23*, 2031-2042.

83. Yoo, H. J.; **Håkansson, K.** Phosphate-containing Metabolite Enrichment with TiO<sub>2</sub> Micro-tips. *Bull. Kor. Chem. Soc.* **2012**, *33*, 2475-2476.
82. Hersberger, K. E.; **Håkansson, K.** Characterization of *O*-sulfopeptides by Negative Ion Mode Tandem Mass Spectrometry: Superior Performance of Negative-Ion Electron Capture Dissociation. *Anal. Chem.* **2012**, *84*, 6370-6377 (**accelerated article**).
81. Song, H.; **Håkansson, K.** Electron Detachment Dissociation and Negative Ion Infrared Multiphoton Dissociation of Electrosprayed Intact Proteins. *Anal. Chem.* **2012**, *84*, 871-876.
80. Zhou, W.; **Håkansson, K.** Electron Detachment Dissociation of Fluorescently Labeled Sialylated Oligosaccharides. *Electrophoresis* **2011**, *32*, 3526-3535 (invited, special issue on Glycomics and Glycoproteomics).
79. Yoo, H. J.; Wang, N.; Zhuang, S. (undergraduate author); Song, H.; **Håkansson, K.** Negative Ion Electron Capture Dissociation: Radical-Driven Fragmentation of Charge-Increased Gaseous Peptide Anions. *J. Am. Chem. Soc.* **2011**, *133*, 16790-16793.
78. Rath, C. M.; Janto, B.; Earl, J.; Ahmed, A.; Hu, F. Z.; Hiller, L.; Dahlgren, M.; Kreft, R.; Yu, F.; Wolff, J. J.; Kweon, H. K.; Christiansen, M. A.; **Håkansson, K.**; Williams, R.; Ehrlich, G.; Sherman, D. H. Meta-omic Characterization of the Marine Invertebrate Microbial Consortium that Produces the Chemotherapeutic Natural product ET-743. *ACS Chem. Biol.* **2011**, *6*, 1244-1256.
77. Zhou, W.; **Håkansson, K.** Structural Determination of Carbohydrates by Fourier Transform Tandem Mass Spectrometry. *Curr. Proteomics* **2011**, *8*, 297-308.
76. Kalli, A.; Grigorean, G.; **Håkansson, K.** Electron Induced Dissociation of Singly Deprotonated Peptides. *J. Am. Soc. Mass Spectrom.* **2011**, *22*, 2209-2221.
75. Ding, Y.; Rath, C. M.; Bolduc, K. L.; **Håkansson, K.**; Sherman, D. H. Chemoenzymatic Synthesis of Cryptophycin Anticancer Agents by an Ester Bond Forming Nonribosomal Peptide Synthetase Module. *J. Am. Chem. Soc.* **2011**, *133*, 14492-14495.
74. Bonnett, S. A.; Rath, C. M.; Shareef, R.; Joels, J. R.; Chemler, J.; **Håkansson, K.**; Reynolds, K.; Sherman, D. H. Acyl-CoA Subunit Selectivity in the Terminal Pikromycin Polyketide Synthase Module: Steady-State Kinetics and Active-Site Occupancy Analysis by FTICR-MS. *Chem. Biol.* **2011**, *18*, 1075-1081.
73. Liu H. C.; **Håkansson, K.** Electron Capture Dissociation of Divalent Metal-Adducted Sulfated Oligosaccharides. *Int. J. Mass Spectrom.* **2011**, *305*, 170-177 (invited, special issue honoring Catherine E. Costello).
72. Yoo, H. J.; **Håkansson, K.** Determination of Phospholipid Regiochemistry by Ag(I) Adduction and Tandem Mass Spectrometry. *Anal. Chem.* **2011**, *83*, 1275-1283.
71. **Håkansson, K.**; Klassen, J. S. Ion Activation Methods for Tandem Mass Spectrometry. In *Electrospray and MALDI Mass Spectrometry: Fundamentals, Instrumentation, Practicalities, and Biological Applications*; Cole, R. B. Ed.; John Wiley & Sons: New York, **2010**; pp 571-630.
70. Buchholz, T. J.; Rath, C. M.; Lopanik, N. B.; Gardner, N. P.; **Håkansson, K.**; Sherman, D. H. Polyketide  $\beta$ -Branching in Bryostatin Biosynthesis: Identification of Surrogate Acetyl-ACP Donors for BryR, an HMG-ACP Synthase. *Chem. Biol.* **2010**, *17*, 1092-1100.
69. Khare, D.; Wang, B.; Gu, L.; Razelun, J.; Sherman, D. H.; Gerwick, W. H.; **Håkansson K.**; Smith, J. L. Crystal Structure of the Halogenase Domain in Curacin A Biosynthesis: Conformational Switch Triggered by  $\alpha$ -Ketoglutarate. *Proc. Natl. Acad. Sci. U.S.A.* **2010**, *107*, 14099-14104.
68. Yoo, H. J.; **Håkansson, K.** Determination of Double Bond Location in Fatty Acids by Manganese Adduction and Electron Induced Dissociation. *Anal. Chem.* **2010**, *82*, 6940-6946.
67. Kalli, A.; **Håkansson, K.** Electron Capture Dissociation of Highly Charged Proteolytic Peptides from Lys N, Lys C and Glu C Digestion. *Mol. Biosyst.* **2010**, *6*, 1668-1681 (invited, special issue on Emerging Investigators).
66. Yoon, M.; Song, H.; **Håkansson, K.**; Marsh, E. N. G. Hydrogen Tunneling in Adenosylcobalamin-Dependent Glutamate Mutase: Evidence from Intrinsic Kinetic Isotope Effects Measured by *Intra*-molecular Competition. *Biochemistry*, **2010**, *49*, 3168-3173.
65. Matson, J. S.; Yoo, H. J.; **Håkansson, K.**; DiRita, V. J. Polymyxin B Resistance in El Tor *Vibrio cholerae* Requires Lipid Acylation Catalyzed by MsbB. *J. Bacteriol.* **2010**, *192*, 2044-2052.

64. Yang, J.; **Håkansson, K.** Tandem Mass Spectrometry of Nucleic Acids. In *Mass Spectrometry of Nucleosides and Nucleic Acids*; Banoub, J. H.; Limbach, P. A. Eds.; CRC Press: Boca Raton, **2009**; pp 95-116.
63. Gu, L.; Wang, B.; Kulkarni, A.; Gehret, J. J.; Lloyd, K.; Gerwick, L.; Gerwick, W. H.; Wipf, P.; **Håkansson, K.**; Smith, J. L.; Sherman, D. H. Polyketide Decarboxylative Chain Termination Preceded by *O*-Sulfonation in Curacin A Biosynthesis. *J. Am. Chem. Soc.* **2009**, *131*, 16033-16035.
62. Majmudar, C. Y.; Wang, B.; Lum, J. K.; **Håkansson, K.**; Mapp, A. K. A High Resolution Interaction Map of Three Transcriptional Activation Domains with an Essential Co-activator from Photo Cross-Linking and Multiplexed Mass Spectrometry. *Angew. Chem. Int. Ed.* **2009**, *48*, 7021-7024 (selected as VIP).
61. Gu, L.; Wang, B.; Kulkarni, A.; Geders, T. W.; Grindberg, R. V.; Gerwick, L. G.; **Håkansson, K.**; Wipf, P.; Smith, J. L.; Gerwick, W. H.; Sherman, D. H. Metamorphic Enzyme Assembly in Polyketide Diversification. *Nature* **2009**, *459*, 731-735.
60. Yang, J.; **Håkansson, K.** Characterization of Oligodeoxynucleotide Fragmentation Pathways in Infrared Multiphoton Dissociation and Electron Detachment Dissociation by Fourier Transform Ion Cyclotron Double Resonance. *Eur. J. Mass Spectrom.* **2009**, *15*, 293-304 (invited, special issue honoring Peter J. Derrick).
59. Mo, J. J.; Todd, G. C.; **Håkansson, K.** Characterization of Nucleic Acid Higher Order Structure by Gas-Phase H/D Exchange in a Quadrupole-FT-ICR Mass Spectrometer. *Biopolymers* **2009**, *91*, 256-264 (invited, special issue dedicated to advances in the investigation of nucleic acids and nucleic acid assemblies).
58. Wilson-Stanford, S.; Kalli, A.; **Håkansson, K.**; Kastrantas, J.; Orugunty, R. S.; Breukink, E.; Smith, L. Oxidation of Lanthionines Renders the Lantibiotic Nisin Inactive. *Appl. Environ. Microbiol.* **2009**, *75*, 1381-1387.
57. Ditzler, M. A.; Rueda, D.; Mo, J. J.; **Håkansson, K.**; Walter, N. G. A Rugged Free Energy Landscape Separates Multiple Functional RNA Folds Throughout Denaturation. *Nucleic Acids Res.* **2008**, *36*, 7088-7099.
56. Lopanik, N. B.; Shields, J. A.; Buchholz, T. J.; Rath, C. M.; Hothersall, J.; Haygood, M. G.; **Håkansson, K.**; Thomas, C. M.; Sherman, D. H. *diIn vivo* and *in vitro* Trans-Acylation by BryP, the Putative Bryostatins Pathway Acyltransferase Derived from an Uncultured Marine Symbiont. *Chem. Biol.* **2008**, *15*, 1175-1186.
55. Yang, J.; **Håkansson, K.** Characterization and Optimization of Electron Detachment Dissociation Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Int. J. Mass Spectrom.* **2008**, *276*, 144-148 (invited, special issue on ion-electron and ion-ion interactions).
54. Kalli, A.; **Håkansson, K.** Comparison of the Electron Capture Dissociation Fragmentation Behavior of Doubly- and Triply-protonated Peptides from Trypsin, Glu-C and Chymotrypsin Digestion. *J. Proteome Res.* **2008**, *7*, 2834-2844.
53. Liu, H. C.; Yoo, H. J.; **Håkansson, K.** Characterization of Phosphate-Containing Metabolites by Calcium Adduction and Electron Capture Dissociation. *J. Am. Soc. Mass Spectrom.* **2008**, *19*, 799-808 (invited, special issue honoring Roman A. Zubarev).
52. Kweon H. K.; **Håkansson, K.** Metal Oxide-Based Enrichment Combined with Gas-Phase Ion-Electron Reactions for Improved Mass Spectrometric Characterization of Protein Phosphorylation. *J. Proteome Res.* **2008**, *7*, 749-755.
51. Adamson, J. T.; **Håkansson, K.** Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry for Lectin Analysis. In *Lectins: Analytical Technologies*; Nilsson, C. L. Ed.; Elsevier: Amsterdam, **2007**; pp 343-371.
50. Geders, T. W.; Gu, L.; Mowers, J. C.; Liu, H. C.; Gerwick, W. H.; **Håkansson, K.**; Sherman, D. H.; Smith, J. L. Crystal Structure of the ECH<sub>2</sub> Catalytic Domain of CurF from *Lyngbya majuscula*: Insights into a Decarboxylase Involved in Polyketide Chain  $\beta$ -branching. *J. Biol. Chem.* **2007**, *282*, 35954-35963.
49. Adamson, J. T.; **Håkansson, K.** Electron Detachment Dissociation of Neutral and Sialylated Oligosaccharides. *J. Am. Soc. Mass Spectrom.* **2007**, *18*, 2162-2172.

48. Goldstein, I. J.; Winter, H. C.; Aurandt, J.; Confer, L.; Adamson, J. T.; **Håkansson, K.**; Remmer, H. A New  $\alpha$ -Galactosyl-Binding Protein from the Mushroom *Lyophyllum decastes*. *Arch. Biochem. Biophys.* **2007**, *467*, 268–274.
47. Gu, L.; Geders, T. W.; Wang, B.; Gerwick, W. H.; **Håkansson, K.**; Smith, J. L.; Sherman, D. H. GNAT-Like Strategy for Polyketide Chain Initiation. *Science* **2007**, *318*, 970-974.
46. Yoon, M.; Kalli, A.; Lee, H. Y.; **Håkansson, K.**; Marsh, E. N. G. Intrinsic Deuterium Kinetic Isotope Effects in Glutamate Mutase Measured by an Intramolecular Competition Experiment. *Angew. Chem. Int. Ed.* **2007**, *46*, 8455-8459.
45. Liu, H. C.; **Håkansson, K.** Abundant *b*-Type Ions Produced in Electron Capture Dissociation of Peptides without Basic Amino Acid Residues. *J. Am. Soc. Mass Spectrom.* **2007**, *18*, 2007-2013.
44. Mo, J. J.; **Håkansson, K.** Oligonucleotide Gas-Phase Hydrogen/Deuterium Exchange with D<sub>2</sub>S in the Collision Cell of a Quadrupole-Fourier Transform Ion Cyclotron Resonance Mass Spectrometer. *Anal. Chem.* **2007**, *79*, 7893-7898.
43. Yoo, H. J.; Liu, H. C.; **Håkansson, K.** Infrared Multiphoton Dissociation and Electron-Induced Dissociation as Alternative MS/MS Strategies for Metabolite Identification. *Anal. Chem.* **2007**, *79*, 7858-7866.
42. Liu, H. C.; Lee, J. Y.; Sherman, D. H.; **Håkansson, K.** Collision Activated Dissociation, Infrared Multiphoton Dissociation, and Electron Capture Dissociation of the *Bacillus anthracis* Siderophore Petrobactin and its Metal Ion Complexes. *J. Am. Soc. Mass Spectrom.* **2007**, *18*, 842-849.
41. Kalli, A.; **Håkansson, K.** Preferential Cleavage of S-S and C-S Bonds in Electron Detachment Dissociation and Infrared Multiphoton Dissociation of Disulfide-Linked Peptide Anions. *Int. J. Mass Spectrom.* **2007**, *263*, 71-81.
40. Adamson, J. T.; **Håkansson, K.** Electron Capture Dissociation of Oligosaccharides Ionized with Alkali, Alkaline Earth, and Transition Metals. *Anal. Chem.* **2007**, *79*, 2901-2910.
39. Lee, J. Y.; Janes, B. K.; Passalacqua, K. D.; Pflieger, B.; Bergman, N. H.; Liu, H. C.; **Håkansson, K.**; Somu, R. V.; Aldrich, C. C.; Cendrowski, S.; Hanna, P.; Sherman, D. H. Biosynthetic Analysis of the Petrobactin Siderophore Pathway from *Bacillus anthracis*. *J. Bacteriol.* **2007**, *189*, 1698-1710.
38. Liu, H. C.; **Håkansson, K.** Divalent Metal Ion-Peptide Interactions Probed by Electron Capture Dissociation of Trications. *J. Am. Soc. Mass Spectrom.* **2006**, *17*, 1731-1741.
37. Liu, H. C.; **Håkansson, K.** Electron Capture Dissociation of Tyrosine O-Sulfated Peptides Complexed with Divalent Metal Cations. *Anal. Chem.* **2006**, *78*, 7570-7576.
36. Yang, J.; **Håkansson, K.** Fragmentation of Oligoribonucleotides from Gas-Phase Ion-Electron Reactions. *J. Am. Soc. Mass Spectrom.* **2006**, *17*, 1369-1375 (invited, special issue honoring James A. McCloskey).
35. Mo, J. J.; **Håkansson, K.** Characterization of Nucleic Acid Higher Order Structure by Tandem High Resolution Mass Spectrometry. *Anal. Bioanal. Chem.* **2006**, *386*, 675-681 (invited, Young Investigators issue).
34. Gu, L.; Jia, J.; Liu, H. C.; **Håkansson, K.**; Gerwick, W. H.; Sherman, D. H. Metabolic Coupling of Dehydration in the Curacin A Pathway: Functional Identification of a Mechanistically Diverse Enzyme Pair. *J. Am. Chem. Soc.* **2006**, *128*, 9014-9015.
33. Kweon, H. K.; **Håkansson, K.** Selective Zirconium Dioxide-Based Enrichment of Phosphorylated Peptides for Mass Spectrometric Analysis. *Anal. Chem.* **2006**, *78*, 1743-1749 (**accelerated article, featured as a 2006 Most-Cited Article for that journal, and as an ACS “hot paper” in January 2008**).
32. Adamson, J. T.; **Håkansson, K.** Infrared Multiphoton Dissociation and Electron Capture Dissociation of High Mannose-Type Glycopeptides. *J. Proteome Res.* **2006**, *5*, 493-501.
31. Kweon, H. K.; **Håkansson, K.** Site-Specific Amide Hydrogen Exchange in Melittin Probed by Electron Capture Dissociation Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Analyst* **2006**, *131*, 275-280 (invited, special issue on Emerging Investigators).
30. Yang, J.; Mo, J. J.; Adamson, J. T.; **Håkansson, K.** Characterization of Oligodeoxynucleotides by Electron Detachment Dissociation Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Anal. Chem.* **2005**, *77*, 1876-1882.



29. Cooper, H. J.; **Håkansson, K.**; Marshall, A. G. The Role of Electron Capture Dissociation in Biomolecular Analysis. *Mass Spectrom. Rev.* **2005**, *24*, 201-222 (**2005-2006 second most cited article for that journal**).
28. Schultz, K. N.; **Håkansson, K.** Rapid Electron Capture Dissociation of Mass-Selectively Accumulated Oligonucleotide Dications. *Int. J. Mass Spectrom.* **2004**, *234*, 123-130.
27. Hurd, T. W.; Fan, S.; Liu, A.; Kweon, H. K.; **Håkansson, K.**; Margolis, B. Phosphorylation-dependent Binding of 14-3-3 to the Polarity Protein Par3 Regulates Cell Polarity in Mammalian Epithelia. *Curr. Biol.* **2003**, *13*, 2082-2090.

## POSTDOCTORAL PUBLICATIONS

26. Chalmers, M. J.; **Håkansson, K.**; Johnson, R.; Smith, R.; Shen, J.; Emmett, M. R.; Marshall, A. G. Characterization of Protein Kinase A Phosphorylation with Tandem Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Proteomics* **2004**, *4*, 970-981.
25. He, F.; Emmett, M. R.; **Håkansson, K.**; Hendrickson, C. L.; Marshall, A. G. Theoretical and Experimental Prospects for Protein Identification Based Solely on Accurate Mass Measurement. *J. Proteome Res.* **2004**, *3*, 61-67.
24. **Håkansson, K.**; Emmett, M. R.; Marshall, A. G.; Davidsson, P.; Nilsson, C. L. Structural Analysis of Gel-Separated Glycoproteins from Human Cerebrospinal Fluid by Tandem High Resolution Mass Spectrometry. *J. Proteome Res.* **2003**, *2*, 581-588.
23. **Håkansson, K.**; Cooper, H. J.; Hudgins, R. R.; Nilsson, C. L. High Resolution Tandem Mass Spectrometry for Structural Biochemistry. *Curr. Org. Chem.* **2003**, *7*, 1503-1525.
22. Cooper, H. J.; **Håkansson, K.**; Marshall, A. G.; Hudgins, R. R.; Haselmann, K. F.; Kjeldsen, F.; Budnik, B. A.; Polfer, N. C.; Zubarev, R. A. The Diagnostic Value of Amino Acid Side-chain Losses in Electron Capture Dissociation of Polypeptides. *Eur. J. Mass Spectrom.* **2003**, *9*, 221-222.
21. Cooper, H. J.; Hudgins, R. R.; **Håkansson, K.**; Marshall, A. G. Secondary Fragmentation of Linear Peptides in Electron Capture Dissociation. *Int. J. Mass Spectrom.* **2003**, *228*, 723-728.
20. **Håkansson, K.**; Chalmers, M. J.; Quinn, J. P.; McFarland, M. A.; Hendrickson, C. L.; Marshall, A. G. Combined Electron Capture and Infrared Multiphoton Dissociation for Multistage MS/MS in an FT-ICR Mass Spectrometer. *Anal. Chem.* **2003**, *75*, 3256-3262.
19. Fagerquist, C. K.; Hudgins, R. R.; Emmett, M. R.; **Håkansson, K.**; Marshall, A. G. An Antibiotic Linked to Peptides and Proteins is Released by Electron Capture Dissociation Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *J. Am. Soc. Mass Spectrom.* **2003**, *14*, 302-310.
18. **Håkansson, K.**; Hudgins, R. R.; Marshall, A. G.; O'Hair, R. A. J. Electron Capture Dissociation and Infrared Multiphoton Dissociation of Oligodeoxynucleotide Dications. *J. Am. Soc. Mass Spectrom.* **2003**, *14*, 23-41.
17. **Håkansson, K.**; Quenzer, T. L.; Marshall, A. G.; Emmett, M. R. Fourier Transform Ion Cyclotron Resonance Mass Spectrometry for Peptide Analysis. In *Mass Spectrometry and Hyphenated Techniques in Neuropeptide Research*; Ekman, R.; Silberring, J., Eds.; Wiley: New York, **2002**; pp 323-343.
16. Nilsson, C. L.; Cooper, H. J.; **Håkansson, K.**; Marshall, A. G.; Östberg, Y.; Lavrinovicha, M.; Bergström, S. Characterization of the P13 Membrane Protein of *Borrelia burgdorferi* by Mass Spectrometry. *J. Am. Soc. Mass Spectrom.* **2002**, *13*, 295-299.
15. Cooper, H. J.; Hudgins, R. R.; **Håkansson, K.**; Marshall, A. G. Characterization of Amino Acid Side Chain Losses in Electron Capture Dissociation. *J. Am. Soc. Mass Spectrom.* **2002**, *13*, 241-249.
14. **Håkansson, K.**; Cooper, H. J.; Emmett, M. R.; Costello, C. E.; Marshall, A. G.; Nilsson, C. L. Electron Capture Dissociation and Infrared Multiphoton Dissociation MS/MS of an N-Glycosylated Tryptic Peptide To Yield Complementary Sequence Information. *Anal. Chem.* **2001**, *73*, 4530-4536.
13. **Håkansson, K.**; Emmett, M. R.; Hendrickson, C. L.; Marshall, A. G. High Sensitivity Tandem Electron Capture Dissociation FTICR Mass Spectrometry of Microelectrosprayed Peptides. *Anal. Chem.* **2001**, *73*, 3605-3610.

## GRADUATE STUDENT PUBLICATIONS

12. Hagman, C.; Håkansson, P.; Buijs, J.; **Håkansson, K.** Inter-Molecular Migration During Collisional Activation Monitored by Hydrogen/Deuterium Exchange FT-ICR Tandem Mass Spectrometry. *J. Am. Soc. Mass Spectrom.* **2004**, *15*, 639-646.
11. Buijs, J.; Hagman, C.; **Håkansson, K.**; Richter, J. H.; Håkansson, P.; Oscarsson, S. Inter- and Intra-molecular Migration of Peptide Amide Hydrogens during Electrospray Ionization. *J. Am. Soc. Mass Spectrom.* **2001**, *12*, 410-419.
10. Palmblad, M.; **Håkansson, K.**; Håkansson, P.; Feng, X. D.; Cooper, H. J.; Giannakopoulos, A. E.; Green, P. S.; Derrick, P. J. A 9.4 T Fourier Transform Ion Cyclotron Resonance Mass Spectrometer: Description and Performance. *Eur. J. Mass Spectrom.* **2000**, *6*, 267-275.
9. Buijs, J.; **Håkansson, K.**; Hagman, C.; Håkansson, P.; Oscarsson, S. A New Method for the Accurate Determination of the Isotopic State of Single Amide Hydrogens within Peptides using Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Rapid Commun. Mass Spectrom.* **2000**, *14*, 1751-1756.
8. **Håkansson, K.**; Coorey, R. V.; Zubarev, R. A.; Talrose, V. L.; Håkansson, P. Low Mass Ions Observed in Plasma Desorption Mass Spectrometry of High Explosives. *J. Mass Spectrom.* **2000**, *35*, 337-346.
7. **Håkansson, K.**; Axelsson, J.; Palmblad, M.; Håkansson, P. Mechanistic Studies of Multipole Storage Assisted Dissociation. *J. Am. Soc. Mass Spectrom.* **2000**, *11*, 210-217.
6. **Håkansson, K.**; Zubarev, R. A.; Håkansson, P.; Laiko, V.; Dodonov, A. F. Design and Performance of an Electrospray Ionization Time-of-flight Mass Spectrometer. *Rev. Sci. Instrum.* **2000**, *71*, 36-41.
5. Blomqvist, M.; Bergquist, J.; Westman, A.; **Håkansson, K.**; Håkansson, P.; Fredman, P.; Ekman, R. Identification of Defensins in Human Lymphocyte Nuclei. *Eur. J. Biochem.* **1999**, *263*, 312-318.
4. Axelsson, J.; **Håkansson, K.**; Palmblad, M.; Håkansson, P. A Method to Significantly Lessen the Sample Contamination of the Vacuum Interface of an On-axis Electrospray Ion Source by Adding a Mechanical Shutter. *Rapid Commun. Mass Spectrom.* **1999**, *13*, 1550-1550.
3. **Håkansson, K.**; Zubarev, R. A.; Coorey, R. V.; Talrose, V. L.; Håkansson, P. Interaction between Explosive- and Analyte Layers in Explosive-Matrix Assisted Plasma Desorption Mass Spectrometry. *Rapid Commun. Mass Spectrom.* **1999**, *13*, 1169-1174.
2. Axelsson, J.; Palmblad, M.; **Håkansson, K.**; Håkansson, P. Electron Capture Dissociation of Substance-P using a Commercially Available FT-ICR Mass Spectrometer. *Rapid Commun. Mass Spectrom.* **1999**, *13*, 474-477.
1. **Håkansson, K.**; Zubarev, R.; Håkansson, P. Combination of Nozzle-skimmer Fragmentation and Partial Acid Hydrolysis in Electrospray Ionization Time-of-flight Mass Spectrometry of Synthetic Peptides. *Rapid Commun. Mass Spectrom.* **1998**, *12*, 705-711.

## APPLICATION NOTES

3. Johnson, K. S.; Kweon, H. K.; **Håkansson, K.** Selectivity of Titanium Dioxide & Zirconium Dioxide SPE Tips for Phosphopeptide Enrichment. *ZirChrom*<sup>®</sup> **2006**, Technical Bulletin # 326.
2. Johnson, K. S.; Kweon, H. K.; **Håkansson, K.** Comparison of Titanium Dioxide & Zirconium Dioxide SPE Tips for Phosphopeptide Enrichment. *ZirChrom*<sup>®</sup> **2006**, Technical Bulletin # 325.
1. Johnson, K. S.; Kweon, H. K.; **Håkansson, K.** Effect of Loading Buffer on Phosphopeptide Enrichment using Zirconium Dioxide SPE Tips. *ZirChrom*<sup>®</sup> **2006**, Technical Bulletin # 324.

## INVITED TALKS

124. *12th North American FT MS Conference*, Key West, FL, April 28-May 2, 2019.
123. Discussion Leader, *Gordon Conference on Gaseous Ions: Structures, Energetics and Reactions*, Ventura, CA, February 17-22, 2019.
122. *Chemistry Department Colloquium, University of Nebraska*, January 18, 2019.

121. *The 31st Annual Tandem Mass Spectrometry Workshop*, Lake Louise, AB, Canada, November 28-December 1, 2018.
120. *Anachem/SAS Symposium*, Livonia, MI, November 1, 2018.
119. *The 15th International Uppsala Conference on Electron Capture and Transfer Dissociation*, Leeds, United Kingdom, July 16-18, 2018 (declined due to personal conflict – research scientist Hye Kyong Kweon participated with a talk).
118. *Department of Chemistry and Biochemistry, University of Texas at Arlington*, Arlington, TX, April 20, 2018.
117. *The 30th Annual Tandem Mass Spectrometry Workshop*, Lake Louise, AB, Canada, November 29-December 2, 2017.
116. *SciX Conference*, Reno, NV, October 8-13, 2017.
115. *Advancing Mass Spectrometry for Biophysics and Structural Biology (AMS) Conference*, Ann Arbor, MI, July 28-August 1, 2017.
114. *The 14th International Uppsala Conference on Electron Capture and Transfer Dissociation*, Ithaca, NY, July 12-15, 2017 (declined due to personal conflict – postdoc Borotto participated with a poster).
113. *The 11th Summer School “Mass Spectrometry in Biotechnology and Medicine” (MSBM)*, Dubrovnik, Croatia, July 2-8, 2017 (two talks).
112. *11th North American FT MS Conference*, Key West, FL, April 23-27, 2017.
111. *Department of Chemistry, University of Wyoming*, Laramie, WY, March 31, 2017 (Hach lecturer, two presentations: research seminar + work/life balance presentation to students).
110. *Mesilla Chemistry Workshop*, Mesilla, NM, February 4-7, 2017.
109. *The 29th Annual Tandem Mass Spectrometry Workshop*, Lake Louise, AB, Canada, November 30-December 3, 2016.
108. *Swedish Mass Spectrometry Society Annual Meeting*, Gothenburg, Sweden, November 21-22, 2016.
107. *Department of Chemistry and Biochemistry, Florida International University*, Miami, FL, September 23, 2016.
106. *64th ASMS Conference on Mass Spectrometry and Allied Topics*, San Antonio, TX, June 5-9, 2016 (plenary lecture + Metal Cationization Workshop).
105. *Washington-Baltimore Mass Spectrometry Discussion Group*, Columbia, MD, March 14, 2016.
104. *Department of Chemistry and Biochemistry, University of Missouri-St. Louis*, St Louis, MO, February 29, 2016.
103. *Agilent Technologies*, Santa Clara, CA, January 19, 2016.
102. *Pacifichem 2015*, Honolulu, HI, December 15-20, 2015.
101. *The 28th Annual Tandem Mass Spectrometry Workshop*, Lake Louise, AB, Canada, December 2-5, 2015.
100. *Ardgour Symposium*, Bridge of Cally, Perthshire, Scotland, November 16-20, 2015.
99. *Department of Chemistry, Vanderbilt University*, October 16, 2015.
98. *Bruker Daltonics*, Billerica, MA, May 4, 2015.
97. *10th North American FT MS Conference*, Key West, FL, April 12-16, 2015 (declined due to injury).
96. *The 12th International Uppsala Conference on Electron Capture and Transfer Dissociation*, Lake Arrowhead, CA, March 22-25, 2015 (declined due to injury).
95. *Mesilla Chemistry Workshop*, Mesilla, NM, February 8-10, 2015 (declined due to injury).
94. *The 27th Annual Tandem Mass Spectrometry Workshop*, Lake Louise, AB, Canada, December 3-6, 2014.
93. *Department of Chemistry, University of Arizona*, November 18, 2014.
92. *ACS Central East Regional Meeting*, Pittsburgh, PA, October 29-November 1, 2014 (declined).
91. *Asilomar Conference on Advances in Glycomics and Glycoproteomics: Methods and Applications*, Pacific Grove, CA, October 10-14, 2014 (declined due to personal conflict).
90. *Swedish Mass Spectrometry Society Annual Meeting*, Bålsta, Sweden, October 5-8, 2014.
89. *The 11th International Uppsala Conference on Electron Capture and Transfer Dissociation*, Obergurgl/Tyrol, Austria, March 30-April 2, 2014.

88. *26th Sanibel Conference on Mass Spectrometry: Ion Activation: Fundamentals, Applications, and New Frontiers*, Clearwater, FL, January 30-February 2, 2014.
87. *18<sup>th</sup> Symposium on the Interface of Regulatory and Analytical Sciences for Biotechnology Health Products (WCBP 2014)*, Washington, DC, January 28-30, 2014.
86. *Gordon Research Conference on Biological Molecules in the Gas Phase and in Solution*, Holderness, NH, July 21-26, 2013.
85. *9th North American FT MS Conference*, Key West, FL, April 28-May 1, 2013.
84. *Department of Chemistry, York University*, Toronto, Canada, April 17, 2013.
83. *Delaware Valley Mass Spectrometry Discussion Group*, Philadelphia, PA, March 11, 2013.
82. *Beijing Institute of Technology*, Beijing, China, February 22, 2013.
81. *The 10th International Uppsala Conference on Electron Capture and Transfer Dissociation*, Beijing, China, February 17-21, 2013.
80. *Department of Chemistry, University of Arizona*, Tucson, AZ, September 6, 2012.
79. *The 4th Warren Workshop on Glycoconjugate Analysis*, Athens, GA, August 8-11, 2012 (presented by Ning Wang).
78. *Peptide Fragmentation Workshop, 60th ASMS Conference on Mass Spectrometry and Allied Topics*, Vancouver, Canada, May 20-24, 2012.
77. *The 63rd Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, Orlando, FL, March 11-15, 2012.
76. *The 9th International Uppsala Conference on Electron Capture and Transfer Dissociation*, Charleston, SC, February 19-22, 2012.
75. *The 24th Annual Tandem Mass Spectrometry Workshop*, Lake Louise, AB, Canada, November 30-December 3, 2011 (Keynote Speaker).
74. *Department of Chemistry, University of Akron*, Akron, OH, October 25, 2011.
73. *Department of Chemistry, Kalamazoo College*, Kalamazoo, MI, October 17, 2011.
72. *Department of Chemistry, Colorado State University*, Fort Collins, CO, September 14, 2011.
71. *Department of Chemistry, Purdue University*, West Lafayette, IN, September 6, 2011.
70. *Human Proteomics Symposium*, Fitchburg, WI, August 5-6, 2011.
69. *8th North American FT MS Conference*, Key West, FL, May 1-4, 2011.
68. *2011 ACACC Grantee Symposium, Eli Lilly & Company*, Indianapolis, IN, April 12, 2011, declined.
67. *Gordon Research Conference on Gaseous Ions: Structures, Energetics & Reactions*, Galveston, TX, February 27-March 4, 2011.
66. *The 8th International Uppsala Conference on Electron Capture and Transfer Dissociation*, Villars-sur-Ollon, Switzerland, February 6-10, 2011 (presented by Katherine Hersberger).
65. *23rd Sanibel Conference on Mass Spectrometry: From Fragmentation Mechanisms to Sequencing: Tandem Mass Spectrometry Based Peptide and Protein Identification*, St. Pete Beach, FL, January 21-24, 2011.
64. *Pacificchem 2010*, Honolulu, HI, December 15-20, 2010.
63. *Department of Chemistry, University of Wisconsin-Eau Claire*, Eau Claire, WI, December 3, 2010.
62. *The San Francisco Bay Area Mass Spectrometry (BAMS) Discussion Group*, San Francisco, CA, October 26, 2010.
61. *Department of Physics, Wayne State University*, Detroit, MI, October 7, 2010.
60. *9th European Fourier Transform Mass Spectrometry Conference*, Lausanne, Switzerland, April 6-9, 2010.
59. *Department of Chemistry, University of Washington*, Seattle, WA, March 8, 2010.
58. *22nd Sanibel Conference on Mass Spectrometry: From Structural Biology to Drug Discovery: New Roles for Mass Spectrometry of Nucleic Acids*, St. Pete Beach, FL, January 22-25, 2010.
57. *The 7th International Uppsala Conference on Electron Capture and Transfer Dissociation in Mass Spectrometry*, Nara, Japan, December 8-10, 2009.
56. *Anachem/SAS Symposium*, Livonia, MI, October 29, 2009.
55. *Department of Chemistry, Wayne State University*, Detroit, MI, October 13, 2009.
54. *7th North American FT MS Conference*, Key West, FL, April 19-23, 2009.

53. *Department of Medicinal Chemistry, University of Illinois at Chicago, Chicago, IL, January 21, 2009.*
52. *The 6th International Uppsala Conference on Electron Capture and Transfer Dissociation in Mass Spectrometry, Madison, WI, December 7-10, 2008.*
51. *236th ACS National Meeting, Philadelphia, PA, August 17-21, 2008 (presented by Wen Zhou).*
50. *Society for Industrial Microbiology Annual Meeting and Exhibition, San Diego, CA, August 10-14, 2008 (presented by Janet Smith).*
49. *Second Warren Workshop on Glycoconjugate Analysis, University of New Hampshire, Durham Campus, July 9-12, 2008.*
48. *Department of Chemistry, University of Illinois at Chicago, Chicago, IL, May 20, 2008.*
47. *Department of Biochemistry, Boston University, Boston, MA, May 6, 2008.*
46. *Department of Chemistry and Biochemistry, University of California – Los Angeles, Los Angeles, CA, April 18, 2008.*
45. *Department of Chemistry, University of California - Riverside, Riverside, CA, April 17, 2008.*
44. *The 59th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, New Orleans, LA, March 1-7, 2008.*
43. *The 59th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, New Orleans, LA, March 1-7, 2008.*
42. *The Association of Biomolecular Resource Facilities (ABRF) Annual Meeting, Salt Lake City, UT, February 9-12, 2008.*
41. *34<sup>th</sup> Annual Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Memphis, TN, October 14-18, 2007.*
40. *Department of Chemistry, University of Florida, Gainesville, FL, September 26, 2007.*
39. *The First Chicago Biomedical Consortium Proteomics Summer Workshop, University of Chicago Gleacher Center, Chicago, IL, August 27-28, 2007.*
38. *The First Chicago Biomedical Consortium Proteomics Summer Workshop, University of Chicago Gleacher Center, Chicago, IL, August 27-28, 2007.*
37. *55th ASMS Conference on Mass Spectrometry and Allied Topics, Indianapolis, IN, June 3-7, 2007.*
36. *Department of Chemistry, Texas A&M University, College Station, TX, May 17, 2007.*
35. *Department of Chemistry, York University, Toronto, Canada, May 10, 2007.*
34. *Department of Chemistry, University of Pittsburgh, Pittsburgh, PA, April 19, 2007 (graduate student selected seminar speaker).*
33. *Searle Scholars Annual Meeting, Chicago, IL, April 15-17, 2007.*
32. *6th North American FT-ICR MS Conference, Tahoe City, CA, April 1-5, 2007.*
31. *Department of Chemistry, Michigan State University, Lansing, MI, March 16, 2007.*
30. *Gordon Research Conference on Gaseous Ions: Structures, Energetics & Reactions, Ventura Beach, CA, February 25-March 2, 2007.*
29. *International Symposium on High-end Mass Spectrometry for Systems Biology, Korea Research Institute of Standards and Science (KRISS), Daejeon, Korea, February 6-7, 2007.*
28. *The 4th International Uppsala Conference on Electron Capture and Transfer Dissociation in Mass Spectrometry, Hong Kong, China, December 12-15, 2006.*
27. *Department of Chemistry and Biochemistry, University of Maryland, Baltimore, MD, November 7, 2006.*
26. *Department of Pathology, University of Michigan, Ann Arbor, MI, October 12, 2006.*
25. *Workshop on Glycomics, Glycoproteomics, & Proteomics, Indiana University, Bloomington, IN, July 10-14, 2006 (featured speaker).*
24. *Eli Lilly and Company, Indianapolis, IN, June 14, 2006.*
23. *Michigan Mass Spectrometry Discussion Group, Michigan State University, Lansing, MI, March 4, 2006.*
22. *Department of Chemistry, The Ohio State University, Columbus, OH, March 3, 2006.*
21. *The 3rd International Uppsala Conference on Electron Capture and Transfer Dissociation in Mass Spectrometry, Snoqualmie, WA, December 6-9, 2005.*

20. *Department of Chemistry, Oakland University, Rochester, MI, October 12, 2005.*
19. *The 53rd ASMS Conference on Mass Spectrometry and Allied Topics, San Antonio, TX, June 5-9, 2005 (presented by Jingjie Mo).*
18. *5th North American FT-ICR MS Conference, Key West, FL, April 17-20, 2005. Declined due to child bearing.*
17. *The 2nd International Uppsala Symposium on Electron Capture Dissociation of Biomolecules and Related Phenomena, Edinburgh, Scotland, August 25-28, 2004.*
16. *36th ACS Central Regional Meeting, Indianapolis, IN, June 2-4, 2004.*
15. *Department of Chemistry, Wayne State University, Detroit, MI, February 11, 2004.*
14. *The 1st International Uppsala Symposium on Electron Capture Dissociation of Biomolecules and Related Phenomena, Stockholm, Sweden and Helsinki, Finland, October 19-22, 2003.*
13. *Biophysics Research Division, University of Michigan, Ann Arbor, MI, September 12, 2003.*

#### **POSTDOCTORAL INVITED TALKS**

12. *Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL, March 27, 2003.*
11. *Department of Chemistry, Indiana University, Bloomington, IN, January 13-15, 2003.*
10. *School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, January 8-9, 2003.*
9. *Department of Chemistry, University of Minnesota, Minneapolis, MN, January 6-7, 2003.*
8. *Department of Chemistry, University of Arizona, Tucson, AZ, December 11-14, 2002.*
7. *Department of Chemistry, University of Michigan, Ann Arbor, MI, December 9-10, 2002.*
6. *Departments of Chemistry and Biochemistry, University of Wisconsin, Madison, WI, December 2-4, 2002.*
5. *Department of Chemistry, University of Utah, Salt Lake City, UT, November 21-22, 2002.*
4. *Mass Spectrometry Resource, Boston University School of Medicine, Boston, MA, April 26-28, 2002.*
3. *Pfizer Global R&D, La Jolla, CA, June 19-23, 2002.*
2. *3rd North American FT-ICR MS Conference, Austin, TX, March 22-24, 2001.*

#### **GRADUATE STUDENT INVITED TALK**

1. *Bioteknik i Mälardalen, Uppsala, Sweden, September 24, 1999.*

#### **CONTRIBUTED TALKS**

65. *66th ASMS Conference on Mass Spectrometry and Allied Topics, San Diego, CA, June 3-7, 2018 (given by Isaac Agyekum).*
64. *66th ASMS Conference on Mass Spectrometry and Allied Topics, San Diego, CA, June 3-7, 2018 (given by Qingyi Wang).*
63. *11th North American FT MS Conference, Key West, FL, April 23-27, 2017 (selected student oral presentation by Qingyi Wang).*
62. *63rd ASMS Conference on Mass Spectrometry and Allied Topics, St. Louis, MO, May 31-June 4, 2015 (given by Kevin Ileka).*
61. *10th North American FT MS Conference, Key West, FL, April 12-16, 2015 (selected student oral presentation by Kevin Ileka).*
60. *Anachem/SAS Symposium, Livonia, MI, November 6, 2014 (given by Tao Jiang).*
59. *62nd ASMS Conference on Mass Spectrometry and Allied Topics, Baltimore, MD, June 15-19, 2014.*
58. *11th European FTMS Conference. Paris, France, April 22-25, 2014 (given by Wendi Hale).*
57. *The 65th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Chicago, IL, March 2-6, 2014 (given by Ning Wang).*

56. *26<sup>th</sup> Lake Louise Tandem Mass Spectrometry Workshop*, Lake Louise, AB, Canada, December 4-7, 2013 (given by Ning Wang).
55. *61st ASMS Conference on Mass Spectrometry and Allied Topics*, Minneapolis, MN, June 9-13, 2013.
54. *61st ASMS Conference on Mass Spectrometry and Allied Topics*, Minneapolis, MN, June 9-13, 2013 (given by Ning Wang).
53. *9th North American FT MS Conference*, Key West, FL, April 28-May 1, 2013 (selected student oral presentation by Wendi Hale).
52. *Anachem/SAS Symposium*, Livonia, MI, November 1, 2012 (given by Wendi Hale).
51. *60th ASMS Conference on Mass Spectrometry and Allied Topics*, Vancouver, Canada, May 20-24, 2012 (given by Ning Wang).
50. *60th ASMS Conference on Mass Spectrometry and Allied Topics*, Vancouver, Canada, May 20-24, 2012.
49. *11th AIChE Annual Meeting*, Minneapolis, MN, October 16-21, 2011 (given by Marjan Varedi).
48. *59th ASMS Conference on Mass Spectrometry and Allied Topics*, Denver, CO, June 5-9, 2011 (given by Ning Wang).
47. *8th North American FT MS Conference*, Key West, FL, May 1-4, 2011 (selected student oral presentation by Ning Wang).
46. *Michigan Mass Spectrometry Discussion Group*, Ann Arbor, MI, December 10, 2010 (given by Ning Wang)
45. *Anachem/SAS Symposium*, Livonia, MI, October 28, 2010 (student oral presentation award to Katherine Hersberger).
44. *6th Annual Midwest Carbohydrate and Glycobiology Symposium*, Toledo, OH, September 24-25, 2010 (outstanding oral presentation award to Di Gao).
43. *Novartis Symposium, Department of Chemistry, University of Michigan*, Ann Arbor, MI, August 12, 2010 (given by Christopher Rath).
42. *58th ASMS Conference on Mass Spectrometry and Allied Topics*, Salt Lake City, UT, May 22-27, 2010.
41. *58th ASMS Conference on Mass Spectrometry and Allied Topics*, Salt Lake City, UT, May 22-27, 2010 (given by Hangtian Song).
40. *The 61st Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, Orlando, FL, February 28-March 5, 2010 (given by Bo Wang).
39. *57th ASMS Conference on Mass Spectrometry and Allied Topics*, Philadelphia, PA, May 31-June 4, 2009 (given by Panagiotis Papoulias).
38. *The 60th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, Chicago, IL, March 8-13, 2009 (given by Hyun Ju Yoo).
37. *Perspectives in Chemistry Research at the University of Michigan (PECRUM)*, Department of Chemistry, University of Michigan, Ann Arbor, MI, August 1, 2008 (given by Wen Zhou).
36. *56th ASMS Conference on Mass Spectrometry and Allied Topics*, Denver, CO, June 1-5, 2008.
35. *56th ASMS Conference on Mass Spectrometry and Allied Topics*, Denver, CO, June 1-5, 2008 (given by Anastasia Kalli).
34. *The 59th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, New Orleans, LA, March 1-7, 2008 (given by Julie Adamson).
33. *The 5th Uppsala Conference on Electron Capture and Transfer Dissociation: Fundamentals and Applications*, Paris, France, December 3-5, 2007.
32. *Anachem/SAS Symposium*, Livonia, MI, November 1, 2007 (given by Anastasia Kalli).
32. *55th ASMS Conference on Mass Spectrometry and Allied Topics*, Indianapolis, IN, June 3-7, 2007 (given by Haichuan Liu).
31. *Anachem/SAS Symposium*, Livonia, MI, November 9, 2006. (given by Hye Kyong Kweon)
30. *231st National ACS Meeting*, Atlanta, GA, March 26-30, 2006 (given by Julie Adamson)
29. *231st National ACS Meeting*, Atlanta, GA, March 26-30, 2006.

28. *The 57th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, Orlando, FL, March 12-17, 2006 (given by Jiong Yang).
27. *The 52nd ASMS Conference on Mass Spectrometry and Allied Topics*, Nashville, TN, May 22-27, 2004.
26. *Midwestern Universities Analytical Chemistry Conference (MUACC)*, Indianapolis, IN, October 9-11, 2003.

**POSTDOCTORAL CONTRIBUTED TALKS (23 co-authored, only talks given are listed)**

10. *The 50th ASMS Conference on Mass Spectrometry and Allied Topics*, Orlando, FL, June 2-6, 2002.
4. *The 49th ASMS Conference on Mass Spectrometry and Allied Topics*, Chicago, IL, May 27-31, 2001.

**GRADUATE STUDENT CONTRIBUTED TALKS**

2. *5th European Fourier Transform Mass Spectrometry Workshop*, Coventry, United Kingdom, September 16-18, 1999.
1. *The 10th Nordic Conference on Mass Spectrometry*, Umeå, Sweden, August 22-25, 1998.