

ANDREW N. HOOFNAGLE
2/14/2017

Work contact information

Department of Laboratory Medicine
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University of Washington Medical Center
Seattle, WA 98195
ahoof@u.washington.edu

EDUCATION

M.D., University of Colorado School of Medicine, Denver, CO
June 1997 – May 2004

Ph.D., University of Colorado at Boulder, Boulder, CO
August 1999 – August 2002
Major: Chemistry and Biochemistry
Thesis title: “Activation induced changes in conformational mobility in the mitogen activated protein kinases.” (Advisor – Natalie Ahn, Ph.D.)

B.S., Cornell University, Ithaca, NY
September 1991 – May 1995
Major: Biology (Microbiology focus)

POSTGRADUATE TRAINING

Resident, Clinical Pathology, Departments of Laboratory Medicine and Pathology
University of Washington Medical Center, Seattle, WA 98195
July 2004 – June 2007

Chief Resident, Clinical Pathology, Departments of Laboratory Medicine and Pathology
University of Washington Medical Center, Seattle, WA 98195
July 2005 – June 2006

FACULTY POSITIONS HELD

Associate Professor
Department of Laboratory Medicine
University of Washington
July 2012 – present

Adjunct Associate Professor
Division of Metabolism, Endocrinology, and Nutrition
Department of Medicine
University of Washington
July 2012 – present

Assistant Professor
Department of Laboratory Medicine
University of Washington
July 2007 – June 2012

Adjunct Assistant Professor
Division of Metabolism, Endocrinology, and Nutrition
Department of Medicine
University of Washington
January 2010 – June 2012

POSITIONS HELD

Head, Division of Chemistry, Department of Laboratory Medicine, University of Washington
February 2013 – present

Director, Clinical Mass Spectrometry, Department of Laboratory Medicine
July 2007 – present

Director, Reference Laboratory Services, Department of Laboratory Medicine
March 2011 – present

Director, Analytical Core, Nutrition and Obesity Research Center, Univ. of Wash.
April 2013 – present

Director, Clinical Chemistry Laboratory, University of Washington Medical Center
Feb 2013 – present

Assistant Director, Clinical Immunology, Department of Laboratory Medicine
July 2007 – present

Associate Director, Analytical Core, Nutrition and Obesity Research Center, Univ. of Wash.
July 2007 – April 2013

Assistant Director, Clinical Chemistry, Department of Laboratory Medicine
July 2007 – January 2013

Assistant Director, Analytical Hub, Mouse Metabolic Phenotyping Center, Univ. of Washington
September 2009 – August 2011

HONORS AND AWARDS

Distinguished Analytical Scientist Award,
Clinical and Pharmaceutical Solutions through Analysis Symposium (2015)
Ellis Benson Award, Academy of Clinical Laboratory Physicians and Scientists (2013)
Outstanding Scientific Achievements by a Young Investigator,
American Association of Clinical Chemistry (AACC, 2012)
Mentor of the Month, AACC (April, 2011)
Outstanding Speaker Award, AACC (2010, 2011, 2013, 2014, 2015)
Grannis Award for Excellence in Research, National Acad. of Clinical Biochemistry (NACB, 2010)
Distinguished Abstract Award, NACB (2009)

Best Abstract Award, Proteomics Division, AACC (2009)
Best Abstract Award, Nutrition Division, AACC (2009)
Robert F. Labbé Junior Faculty Fellowship, University of Washington (2008)
Human Immunology Award, Irvington Institute for Immunological Research (2006, declined)
Student Travel Grant Award, AACC (2006)
Best Abstract Award, Clinical and Diagnostic Immunology Division, AACC (2006)
Young Investigator Awards, Academy of Clinical Laboratory Physicians and Scientists (2006,7)
Strandjord-Clayson Award, Department of Laboratory Medicine, University of Washington (2006)
Young Leader Award, College of American Pathologists Foundation (2004)
Election to Alpha Omega Alpha, University of Colorado School of Medicine (2003)
Citation for Academic Excellence, University of Colorado School of Medicine (1998)
Recipient of Ph.D. Boulder Graduate Fellowship (1998)
NIH Pre-doctoral Intramural Research Training Award (1996 – 1997)
Howard Hughes Research Scholarship, Cornell University (1994)
Morley Student Research Grant, Cornell University (1993)

BOARD CERTIFICATION

Board Certified in Clinical Pathology (August 21, 2007)

LICENSE TO PRACTICE

Washington Physician and Surgeon (July 2006 – present)

PROFESSIONAL ORGANIZATIONS

College of American Pathologists –Fellow, Member of the Accuracy-based Testing Committee
Academy of Clinical Laboratory Physicians and Scientists – Member
American Society for Clinical Pathology – Fellow
American Association for Clinical Chemistry – Annual Meeting Organizing Cmte 2016, Vice-chair
National Academy of Clinical Biochemistry – Fellow, Member of the Board of Directors (2013-6)
American Association for Clinical Chemistry – President, Proteomics Division (2015)
American Association for Clinical Chemistry – Treasurer, Proteomics Division (2012-2014)
American Association for Clinical Chemistry – Chair, Continuing Medical Educ Cmte (2008-2013)
Mass Spectrometry: Applications for the Clinical Laboratory, Annual Meeting – Co-Chair (2008-13)

EDITORIAL RESPONSIBILITIES

Clinical Chemistry, Associate Editor (2010 – present)
Molecular and Cellular Proteomics, Board of Editors (2010 – present)
Proteomics: Clinical Applications, Editorial Board (2011 – present)
Clinical Proteomics, Editorial Board (2011 – present)
Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 6th edition, Associate Editor

TEACHING RESPONSIBILITIES

Laboratory Medicine 322/418 (yearly) *(Clinical Chemistry - Lectures)*
Glucose Testing and Diabetes, Clinical Mass Spectrometry, Thyroid Disorders,
Thyroid Testing, and/or Chromatography

Laboratory Medicine 427 (2007-2015) *(Senior Seminar in Laboratory Medicine - Seminar)*
Critical Pathways

Laboratory Medicine 685 (yearly) *(Senior Medical Students Special Seminar)*
Pheochromocytoma and/or Lipids

Mass Spectrometry: Applications to the Clinical Laboratory (MSACL) 2008, 2010 *(Workshop)*
Evening Workshop: Proteins, Proteomics and Disease Markers

American Association for Clinical Chemistry 2009 *(Moderator for two symposia)*
Applications of LC-MS/MS in the Clinical Laboratory: Proteins
Application of LC-MS/MS in the Clinical Laboratory: Small Molecules

Northwest Medical Laboratory Symposium 2009 *(Workshop)*
LC-MS in the Clinical Laboratory: Using Vitamin D as a Case Study

American Association for Clinical Chemistry 2010 *(Moderator for one symposium)*
Measuring Proteins in Clinical Samples Using LC-MS/MS

American Society for Clinical Pathology 2010 *(Workshop)*
LC-MS/MS and the Clinical Laboratory: Examples from Endocrinology

American Association for Clinical Chemistry 2011 *(Speaker for one symposium)*
Applications of Tandem Mass Spectrometry for Proteomic Clinical Diagnostics

Washington State Society of Pathologists 2011 Annual Meeting *(Speaker for one symposium)*
Thyroid Disease and the Clinical Laboratory

Partners for Clean Competition Annual Meeting 2011, UCLA CME *(Symposium speaker)*
Measuring Proteins Using Mass Spectrometry

American Association for Clinical Chemistry 2012 *(Speaker for one workshop)*
Quality Control for Liquid Chromatography-Mass Spectrometry: Reading the Signs

ASCLS-Washington Spring Seminar 2013 *(Short Course Instructor)*
Mass Spectrometry in the Clinical Laboratory

American Association for Clinical Chemistry 2013
The Why and How-To of Using LCMS to Measure Proteins *(Workshop Speaker)*
What Proteomics Can Learn From Metabolomics *(Symposium Speaker)*
(Symposium Moderator and Speaker)
Why Should We Use Mass Spectrometry to Measure Vitamin D Metabolites?

Meeting the Challenge of Chronic Pain Management (UW CME) *(Instructor)*
UDT – How the Lab Can Help (2013)
Update on Ordering UDTs (2014)

American Society for Clinical Pathology (Webinar on March 26, 2014) *(Instructor)*
Why Should I Use Mass Spectrometry to Measure Vitamin D?

Laboratory Medicine Grand Rounds 2014 (UW CME) *(Instructor)*
A Clinicopathologic Correlation (CPC) in Pain Medicine Testing.

Personalized Diagnostics Today Virtual Meeting (AACC, 2014) *(Instructor)*
Protein Measurements by Mass Spectrometry: Better for Patients?

Seminar Series at Sahlgrenska Academy, Gothenburg, Sweden *(Seminar Speaker)*
Clinical Proteomics

Targeted Proteomics Course at UW 2014-2016 *(Instructor)*
Proteomic Assay Calibration (2015, 2016)
Plasma Proteomics (2015, 2016)
Immunoaffinity Techniques (2014)

MSACL 2012, 2013, 2014, 2015, 2016, 2017
Quantitative Proteomics

(Short Course Instructor)

SPECIAL NATIONAL AND INTERNATIONAL RESPONSIBILITIES

Immunology Devices Panel, Food and Drug Administration (CDRH), Consultant (2016-present)
Opponent, PhD Dissertation Defense of Josef Pannee, University of Gothenburg, Sweden (Nov 2015)
Genome Canada College of Reviewers: Genomic Applications Partnership Program (Sept 2015)
FDA Panel on Laboratory Developed Tests, Member. (January 2015)
NCI's Clinical Proteomic Technologies for Cancer: Think Tank. (April 2014)
Research Oversight Committee, Genome Canada and Genome BC (Sept 2013-present)
Targeted Peptide Measurements in Biology and Medicine: Best Practices for Assay Development Using a "Fit-for-Purpose" Approach (June 2013)
Chair, NIH Study Section – Topic 319 (March 2013)
NCI Frederick Advisory Committee, Immuno-MRM Working Group Meeting (Feb 2013)
NIH Ad hoc Mail-in Reviewer for SBIR/STTR Program (Feb, Sept 2012)
Genome Canada College of Reviewers: Large-Scale Applied Research Project Competition in Genomics and Personalized Health (May 2012)
NIH-AACC Statistical Experimental Design Considerations in Research Studies Using Proteomic Technologies (Aug 2011)
NIH-CDC Int'l Standardization of 25-OH-vit-D Levels in National Health Surveys (Nov 2010)
NIH-CDC Roundtable on NHANES Monitoring of Folate and Vitamin B12, Member (July 2010)
CAP Vitamin D Accuracy-based Proficiency Standards Subcommittee, Member (2010-2011)
NCI-CPTC Strategy Workshop on Implementing a Cancer Biomarker Pipeline (September 2009)
NIH-CDC Roundtable on NHANES Monitoring of Serum 25-OH Vitamin D, Member (July 2009)
NCI-FDA Interagency Oncology Task Force on Molecular Diagnostics, Member (Nov. 2008)

CURRENT RESEARCH SUPPORT

1R01DK101720 (Ix) 04/01/2014-02/28/2017 5%
NIH/NIDDK

Effects of Niacin on Mineral Metabolism in Chronic Kidney Disease

This project aims to determine the effects of niacin on phosphate, FGF23, and other markers of mineral metabolism in CKD patients randomized to niacin or placebo in the AIM-HIGH trial.

Role: PI (subcontract)

1R01DK099199-01 (de Boer) 04/15/2014-02/28/2019 10%
NIH/NIDDK

Vitamin D catabolism in chronic kidney disease

Using injections of stable isotope labeled 25-hydroxyvitamin D, this project aims to understand changes in vitamin D metabolism due to chronic kidney disease.

Role: co-Investigator

P30 DK035816 (Chait/Shwartz)	07/01/2007-06/30/2017	10%
NIH/NIDDK		
Clinical Nutrition Research Unit (CNRU)		
The CNRU Analytical Core provides affiliate investigators with nutrition-related testing for clinical and basic science research studies.		
Role: Director of the Analytical Core		
1 R01 GM107142-01 (MacCoss)	09/01/2013-04/30/2018	10%
NIH/NIGMS		
Self Correcting Nanoflow LC-MS for Clinical Proteomics		
This project aims to test the hypothesis that instrumentation automation in nano-flow chromatography can improve the robustness of clinical protein measurements by LC-MS/MS.		
Role: Co-Investigator		
5 U01 DK099877 02 (Gassman)	07/01/2014-06/30/2018	5%
NIH/NIDDK		
Pilot Clinical Trials in CKD Consortium		
Serve as the specialized laboratory for the measurement of FGF23 in the Pilot Clinical Trials in CKD Consortium, a collection of investigators/groups interested in performing clinical population studies of interventions in chronic kidney disease.		
Role: PI (subcontract)		
Partnership for Clean Competition (Hoofnagle)	12/01/2011-06/08/2017	0%
Sensitive and specific detection of human chorionic gonadotropin and markers of growth hormone administration using LC-MS/MS		
This project aims to develop novel assays employing mass spectrometry to improve the sensitivity and specificity of assays for hCG, IGF-I, and PIIINP, markers of performance enhancing drug use.		
Role: PI		
Industry Grant (Hoofnagle)	10/01/2014-03/29/2018	1%
Waters Technologies Corporation		
Translating Advances in Mass Spectrometry into Clinical Care		
The goal of this project is to evaluate novel methods for protein quantification using new instrumentation and approaches to calibration.		
Role: PI		
1 R01 DK103657-01 (Lemaitre)	09/30/2014-07/31/2017	5%
NIH/NIDDK		
Sphingolipids, Diabetes, and Cardiovascular Disease		
This application seeks to identify plasma ceramide and sphingomyelin species associated with increased risk of incident heart disease and type 2 diabetic subjects in the Strong Heart Family Study.		
Role: Co-investigator		

<p>5 R01 ES024381 (Braun) NIH/NIEHS</p> <p>Endocrine Disrupting Chemicals, Thyroid Hormones, and Child Neurobehavior</p> <p>This project will test the hypothesis that chronic exposure to phthalates, triclosan, and bisphenol A has detrimental effects on the thyroid hormone axis and that these hormonal changes increase the risk of attention-deficit/hyperactivity disorder, cognitive impairments, or learning disabilities in growing children.</p> <p>Role: PI (subcontract)</p>	<p>04/01/2016-03/31/2019</p>	<p>5%</p>
<p>Foundation Grant (Afkarian) Juvenile Diabetes Res Foundation</p> <p>Biomarker Validation and Discovery in Diabetic Nephropathy</p> <p>Targeted proteomics will be used to (1) identify novel biomarkers in urine for the development and progression of diabetic nephropathy and (2) identify novel pathways that are altered during disease progression.</p> <p>Role: Co-investigator</p>	<p>04/01/2015-03/31/2018</p>	<p>2.5%</p>
<p>1 R01 DK107931 (Kestenbaum) NIH/NIDDK</p> <p>Tubular Secretion in Chronic Kidney Disease</p> <p>This grant proposes to advance our understanding of proximal tubule secretion function by (1) estimating renal secretion function and determining associations with major clinical outcomes in CRIC, and (2) recruiting patients with a broad range of kidney function and comparing the ability of tubule secretion and GFR to predict renal drug clearances.</p> <p>Role: Co-investigator</p>	<p>09/01/2015-08/31/2020</p>	<p>5%</p>
<p>2 R01 DK088762 (de Boer) NIH/NIDDK</p> <p>Randomized trial of vitamin D and omega-3 fatty acids for diabetic kidney disease</p> <p>In this competitive renewal application, we propose to extend follow-up of our VITAL DKD ancillary study from 2 to 5 years, add measurements to stored specimens to more comprehensively evaluate treatment effects, and assess intermediate cardiovascular outcomes that complement our primary renal outcome.</p> <p>Role: Co-investigator</p>	<p>12/01/2015-11/30/2019</p>	<p>7.5%</p>
<p>5 R01 DK104706 (Afkarian)</p> <p>Molecular signatures of diabetic kidney disease</p> <p>This project aims to develop and deploy a panel assay to quantify proteins in urine in CRIC participants and in patients from the SKS study to predict disease progression.</p> <p>Role: Co-investigator</p>	<p>04/25/2015-02/28/2018</p>	<p>2.5%</p>

PREVIOUS RESEARCH SUPPORT

1 R01 HL111375-01A1 (Hoofnagle) 07/01/2012-11/30/2016 30%
NIH/NHLBI

HDL and cardiovascular risk in chronic kidney disease

This project aims to identify novel molecular alterations in high density lipoproteins that are associated with poor cardiovascular outcomes and endothelial dysfunction in patients with chronic kidney disease.

Role: PI

U24CA160034-01(Carr) 09/01/2011-08/31/2016 15%
NIH/NCI

Proteo-genomic Discovery, Prioritization and Verification of Cancer Biomarkers

This project is a multi-institutional collaboration to generate hundreds of new assays for putative cancer biomarkers using LC-MS/MS

Role: PI (subcontract)

5 R33 CA173300-02 (Paulovich) 09/01/2013-08/31/2016 5%
NIH/NCI

Advanced development of immuno-MRM technology to analyze archived cancer tissues

The goal of this project is to develop methods that can be used to quantify proteins in tissues by immunoaffinity-LC-MS/MS for diagnosis, prognosis, or therapeutic management of disease.

Role: PI (subcontract)

5 R01 DK094891-02 (Kestenbaum) 09/01/2013-08/31/2015 10%
NIH/NIDDK

Mineral metabolism disturbances and arteriovenous fistula maturation

This project focuses on a better understanding of the mechanisms and markers of fistula maturation failure in patients with end-stage kidney disease.

Role: Co-investigator

3 R01 DK088762 (de Boer) 09/09/2014-08/31/2015 3.75%
NIH/NIDDK/ODS

Randomized trial of vitamin d and omega-3 fatty acids for diabetic kidney disease

This administrative supplement aims to develop and validate a novel LC-MS/MS assay for cholecalciferol and ergocalciferol in human serum and plasma samples.

Role: Co-Investigator

1 R21 AI109817-01 (Abraham) 12/15/2013-11/30/2015 5%
NIH/NIAID

Vitamin d deficiency, inflammation and age-related disease in HIV-infected men

The aim of this study is to characterize vitamin D levels in patients infected with HIV before and after HAART to better understand the importance of vitamin D status on inflammation in treated HIV patients.

Role: PI (subcontract)

1 R01 HL096875-01A1 (de Boer/Kestenbaum) 04/01/2010-03/31/2014 10%
Phosphorus and Vitamin D Metabolism and Cardiovascular Outcomes: Multiethnic Study of Atherosclerosis
The overall goal of this application is to define relationships of phosphorous excess and vitamin D insufficiency with subclinical cardiovascular outcomes in a community based, multi-ethnic population.
Role: co-Investigator

2 R01 AG027002-05A1 (Sarnak) 05/01/2012-03/31/2015 5%
The Aging Kidney: Chronic Injury, Impaired Functions and Clinical Outcomes
This project aims to measure markers of mineral metabolism in the Health ABC cohort to better predict clinical outcomes related to kidney function in a normal aging population.
Role: Co-Investigator (subcontract)

1R01AG034853-01A2 (Shlipak) 05/01/2010-04/30/2015 10%
The Aging Kidney in HIV-Infection: biomarkers for early detection of injury
The overall goal of this proposal is to identify novel biomarkers of early kidney injury that would specify the site of injury within the kidney, precede detectable declines in GFR, and allow for targeted prevention of kidney disease.
Role: PI (subcontract)

1 RC4 DK090766-01 (de Boer) 09/30/2010-09/29/2012 10%
Vitamin D metabolism and type 1 diabetes complications
The overall goal of this application is to assess the potential clinical relevance of impaired vitamin D metabolism in the pathogenesis of type 1 diabetes complications.
Role: co-Investigator

P30 DK017047 (Palmer) 10/01/2009-9/30/2011 10%
Pilot and Feasibility Award - Diabetes and Endocrinology Research Center (DERC)
Lipoproteomic Biomarkers of Vascular Disease in Diabetes
The goal of this proposal is to investigate whether there are proteomic changes in high density lipoproteins or non-high density lipoproteins that associate with type 1 diabetes or the presence of coronary artery disease in subjects with type 1 diabetes.
Role: PI

Commercialization grant (Stayton) 07/01/2011-6/30/2012 5%
Life Sciences Discovery Fund
Smart magnetic nanoparticles in commercial immunoassays
The overall goal of this proposal is to develop the proof-of-principle data needed to interest a commercial investor to bring smart magnetic nanoparticles to market.
Role: Co-investigator

Coulter Foundation (Lai) 06/01/2011-05/30/2012 5%
Next Generation High Sensitivity Immunoassay
The goal of this project is to evaluate the use of smart magnetic nano-particles in immunoassays and compare them to currently available microparticles.
Role: co-PI

Alzheimer's Disease Research Center (Raskind) 05/01/2011-04/30/2012 4%

Pilot grant: Quantification of A-beta and Tau in CSF by LC-MS/MS

This project aims to generate clinical-quality LC-MS/MS assays for A-beta and Tau in CSF to be used as biomarkers of Alzheimer's Disease.

Role: PI

3 U24 DK076126-04S1 (LeBoeuf) 02/01/2010-08/31/2011 5%

Mouse Metabolic Phenotyping Center (MMPC): Diabetes and Diabetic Complications

The MMPC Analytic Core performs specialized testing on mouse samples for characterization of metabolic phenotypes in basic science research.

Role: Assistant Director of the Analytical Hub

P30 DK035816 (Chait) 07/01/2007-06/30/2009

Pilot and Feasibility Award - CNRU

Role of HDL Proteomic Changes in the Pathogenesis of Atherosclerosis in Obesity

This study aims to determine biomarkers of the atherosclerotic risk associated with insulin resistance within the HDL proteome.

Role: PI

Pilot Grant (Hoofnagle) 02/01/2008-01/31/2009

Alliance for Lupus Research

Biomarkers of Atherosclerosis in Systemic Lupus Erythematosus

The goal of this project is to determine the HDL proteomic changes in patients diagnosed with lupus who are at increased risk of atherosclerosis.

Role: PI

ORIGINAL PUBLICATIONS

H-index: 33

1. Rivara MB, Zelnick LR, **Hoofnagle AN**, Newitt R, Tracy RP, Kratz M, Weigle DS, and Kestenbaum BR. (2017) Diurnal and Long-term Variation in Plasma Concentrations and Renal Clearances of Circulating Markers of Kidney Proximal Tubular Secretion. *Clin Chem. (In Press)*
2. Hughes-Austin JM, Rifkin DE, Beben T, Katz R, Sarnak MJ, Deo R, **Hoofnagle AN**, Homma S, Siscovick DS, Sotoodehnia N, Psaty BM, de Boer IH, Kestenbaum B, Shlipak MG, and Ix JH. (2017) The Relation of Serum Potassium Concentration with Cardiovascular Events and Mortality in Community-Living Individuals. *Clin J Am Soc Nephrol.* **12**(2):245-252.
3. Henderson CM, Bollinger JG, Becker JO, Wallace JM, Laha TJ, MacCoss MJ, and **Hoofnagle AN**. (2017) Quantification by nano liquid chromatography-parallel reaction monitoring-mass spectrometry of human apolipoprotein A-I, apolipoprotein B, and hemoglobin A1c in dried blood spots. *Proteomics Clin Appl. (In Press)*

4. Drew DA, Katz R, Kritchevsky S, Ix J, Shlipak M, Gutiérrez OM, Newman A, **Hoofnagle A**, Fried L, Semba RD, and Sarnak M. (2017) Association between Soluble Klotho and Change in Kidney Function: The Health Aging and Body Composition Study. *J Am Soc Nephrol. (In Press)*
5. Kendrick JB, Zelnick L, Chonchol MB, Siscovick D, **Hoofnagle AN**, Ix JH, Sarnak M, Shlipak MG, Kestenbaum B, and de Boer IH. (2017) Serum Bicarbonate Is Associated with Heart Failure in the Multi-Ethnic Study of Atherosclerosis. *Am J Nephrol.* **45**(2):118-126.
6. Zhang L, Tin A, Brown TT, Margolick JB, Witt MD, Palella FJ Jr, Kingsley LA, **Hoofnagle AN**, Jacobson LP, and Abraham AG. (2016) Vitamin D Deficiency and Metabolism in HIV-Infected and HIV-Uninfected Men in the Multicenter AIDS Cohort Study. *AIDS Res Hum Retroviruses. (In Press)*
7. Lutsey PL, Parrinello CM, Misialek JR, **Hoofnagle AN**, Henderson CM, Laha TJ, Michos ED, Eckfeldt JH, Selvin E. (2016) Short-term Variability of Vitamin D-Related Biomarkers. *Clin Chem.* **62**(12):1647-1653.
8. Kennedy JJ, Whiteaker JR, Schoenherr RM, Yan P, Allison K, Shipley M, Lerch M, **Hoofnagle AN**, Baird GS, and Paulovich AG. (2016) Optimized Protocol for Quantitative Multiple Reaction Monitoring-Based Proteomic Analysis of Formalin-Fixed, Paraffin-Embedded Tissues. *J Proteome Res.* **15**(8):2717-28
9. Zhang H, Liu T, Zhang Z, Payne SH, Zhang B, McDermott JE, Zhou JY, Petyuk VA, Chen L, Ray D, Sun S, Yang F, Chen L, Wang J, Shah P, Cha SW, Aiyetan P, Woo S, Tian Y, Gritsenko MA, Clauss TR, Choi C, Monroe ME, Thomas S, Nie S, Wu C, Moore RJ, Yu KH, Tabb DL, Fenyö D, Bafna V, Wang Y, Rodriguez H, Boja ES, Hiltke T, Rivers RC, Sokoll L, Zhu H, Shih IeM, Cope L, Pandey A, Zhang B, Snyder MP, Levine DA, Smith RD, Chan DW, and Rodland KD; CPTAC Investigators. (2016) Integrated Proteogenomic Characterization of Human High-Grade Serous Ovarian Cancer. *Cell.* **166**(3):755-65.
10. Chatterjee R, Zelnick L, Mukamal KJ, Nettleton JA, Kestenbaum BR, Siscovick DS, Ix JH, Tracy R, **Hoofnagle AN**, Svetkey LP, Edelman D, and de Boer IH. (2016) Potassium Measures and Their Associations with Glucose and Diabetes Risk: The Multi-Ethnic Study of Atherosclerosis (MESA). *PLoS One.* **11**(6):e0157252.
11. Mertins P, Mani DR, Ruggles KV, Gillette MA, Clauser KR, Wang P, Wang X, Qiao JW, Cao S, Petralia F, Kawaler E, Mundt F, Krug K, Tu Z, Lei JT, Gatz ML, Wilkerson M, Perou CM, Yellapantula V, Huang KL, Lin C, McLellan MD, Yan P, Davies SR, Townsend RR, Skates SJ, Wang J, Zhang B, Kinsinger CR, Mesri M, Rodriguez H, Ding L, Paulovich AG, Fenyö D, Ellis MJ, and Carr SA; NCI CPTAC. (2016) Proteogenomics connects somatic mutations to signalling in breast cancer. *Nature.* **534**(7605):55-62.

12. Denburg MR, **Hoofnagle AN**, Sayed S, Gupta J, de Boer IH, Appel LJ, Durazo-Arvizu R, Whitehead K, Feldman HI, and Leonard MB; Chronic Renal Insufficiency Cohort study investigators. (2017) Comparison of Two ELISA Methods and Mass Spectrometry for Measurement of Vitamin D-Binding Protein: Implications for the Assessment of Bioavailable Vitamin D Concentrations Across Genotypes. *J Bone Miner Res.* **31**(6):1128-36.
13. **Hoofnagle AN**, Laha TJ, and de Boer IH. (2016) Recalibration of 24,25-Dihydroxyvitamin D3 Results Based on NIST Standard Reference Material 972a. *Am J Kidney Dis.* **67**(5):812-3.
14. Nelson JE, Roth CL, Wilson LA, Yates KP, Aouizerat B, Morgan-Stevenson V, Whalen E, **Hoofnagle A**, Mason M, Gersuk V, Yeh MM, and Kowdley KV. (2016) Vitamin D Deficiency Is Associated With Increased Risk of Non-alcoholic Steatohepatitis in Adults With Non-alcoholic Fatty Liver Disease: Possible Role for MAPK and NF- κ B? *Am J Gastroenterol.* **111**(6):852-63.
15. Beben T, Ix JH, Shlipak MG, Sarnak MJ, Fried LF, **Hoofnagle AN**, Chonchol M, Kestenbaum BR, de Boer IH, and Rifkin DE. (2016) Fibroblast Growth Factor-23 and Frailty in Elderly Community-Dwelling Individuals: The Cardiovascular Health Study. *J Am Geriatr Soc.* **64**(2):270-6.
16. Whiteaker JR, Halusa GN, **Hoofnagle AN**, Sharma V, MacLean B, Yan P, Wrobel JA, Kennedy J, Mani DR, Zimmerman LJ, Meyer MR, Mesri M, Boja E, Carr SA, Chan DW, Chen X, Chen J, Davies SR, Ellis MJ, Fenyö D, Hiltke T, Ketchum KA, Kinsinger C, Kuhn E, Liebler DC, Liu T, Loss M, MacCoss MJ, Qian WJ, Rivers R, Rodland KD, Ruggles KV, Scott MG, Smith RD, Thomas S, Townsend RR, Whiteley G, Wu C, Zhang H, Zhang Z, Rodriguez H, and Paulovich AG. (2016) Using the CPTAC Assay Portal to Identify and Implement Highly Characterized Targeted Proteomics Assays. *Methods Mol Biol.* **1410**:223-36.
17. Henderson CM, Vaisar T, and **Hoofnagle AN**. (2016) Isolating and Quantifying Plasma HDL Proteins by Sequential Density Gradient Ultracentrifugation and Targeted Proteomics. *Methods Mol Biol.* **1410**:105-20.
18. **Hoofnagle AN**, Whiteaker JR, Carr SA, Kuhn E, Liu T, Massoni SA, Thomas SN, Townsend RR, Zimmerman LJ, Boja E, Chen J, Crimmins DL, Davies SR, Gao Y, Hiltke TR, Ketchum KA, Kinsinger CR, Mesri M, Meyer MR, Qian WJ, Schoenherr RM, Scott MG, Shi T, Whiteley GR, Wrobel JA, Wu C, Ackermann BL, Aebersold R, Barnidge DR, Bunk DM, Clarke N, Fishman JB, Grant RP, Kusebauch U, Kushnir MM, Lowenthal MS, Moritz RL, Neubert H, Patterson SD, Rockwood AL, Rogers J, Singh RJ, Van Eyk JE, Wong SH, Zhang S, Chan DW, Chen X, Ellis MJ, Liebler DC, Rodland KD, Rodriguez H, Smith RD, Zhang Z, Zhang H, and Paulovich AG. (2016) Recommendations for the Generation, Quantification, Storage, and Handling of Peptides Used for Mass Spectrometry-Based Assays. *Clin Chem.* **62**(1):48-69.

19. Suchy-Dicey AM, Laha T, **Hoofnagle A**, Newitt R, Sirich TL, Meyer TW, Thummel KE, Yanez ND, Himmelfarb J, Weiss NS, and Kestenbaum BR. (2016) Tubular Secretion in CKD. *J Am Soc Nephrol.* **27**(7):2148-55.
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109. Resing KA, **Hoofnagle AN**, and Ahn NG. (1999) Modeling deuterium exchange behavior of ERK2 using pepsin mapping to probe secondary structure. *J Am Soc Mass Spectrom.* **10**:685-702.

REVIEWS AND BOOK CHAPTERS

1. **Hoofnagle AN** and Bystrom C. (2016) "Proteomics" *In*: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, 6th edition.
2. **Hoofnagle AN** and Roth MY. (2013) Improving the Measurement of Serum Thyroglobulin with Mass Spectrometry. *J Clin Endocr Metab.* **98**:1343-52.
3. Lehmann S, **Hoofnagle A**, Hochstrasser D, Brede C, Glueckmann M, Cocho JA, Ceglarek U, Lenz C, Vialaret J, Scherl A, and Hirtz C. (2012) Quantitative Clinical Chemistry Proteomics (qCCP) using mass spectrometry: general characteristics and application. *Clin Chem Lab Med.* **23**:1-16
4. Becker JO and **Hoofnagle AN**. (2012) Replacing Immunoassays with Tryptic Digestion-Peptide Immunoaffinity Enrichment and Liquid Chromatography-Tandem Mass Spectrometry. *Bioanalysis.* **4**:281-90.
5. Clarke NJ and **Hoofnagle AN**. (2011) Mass Spectrometry Continues Its March into the Clinical Laboratory. *Clinics Lab Med.* **31**:ix-xi.
6. Strathmann FG and **Hoofnagle AN**. (2011) Current and Future Applications of Mass Spectrometry to the Clinical Laboratory. *Am J Clin Path.* **136**:609-16.
7. **Hoofnagle AN**, Vaisar T, Mitra P, and Chait A. (2010) HDL Lipids and Insulin Resistance. *Curr Diab Rep.* **10**:78-86.
8. **Hoofnagle AN** and Heinecke JW. (2009) Lipoproteomics: Using mass spectrometry-based proteomics to explore the assembly, structure, and function of lipoproteins. *J Lipid Res.* **50**:1967-75.
9. **Hoofnagle AN** and Wener MH. (2009) The Fundamental Flaws of Immunoassays and Potential Solutions Using Tandem Mass Spectrometry. *J Immunol Methods.* **347**:3-11.

10. Paulovich AG, Whiteaker JR, **Hoofnagle AN**, and Wang P. (2008) The Interface between Biomarker Discovery and Clinical Validation: The Tar Pit of the Protein Biomarker Pipeline. *Proteomics: Clin Appl.* **2**:1386-1402.
11. **Hoofnagle AN** and Wener MH. (2006) Serum thyroglobulin: A model of immunoassay imperfection. *Clin Lab Int.* **12**:12-4.
12. **Hoofnagle AN**, Resing KA, and Ahn NG. (2004) Practical Methods for Deuterium Exchange/Mass Spectrometry. *Methods Mol Biol.* **250**:283-98.
13. **Hoofnagle AN**, Resing KA, and Ahn NG. (2003) Protein Analysis by Hydrogen Exchange Mass Spectrometry. *Annu Rev Biophys Biomol Struct.* **32**:1-25.

EDITORIALS AND CASE PRESENTATIONS

1. Abbatiello SE, Ackermann BL, Borchers CH, Bradshaw RA, Carr SA, Chalkley RJ, Choi M, Deutsch EW, Domon B, **Hoofnagle AN**, Keshishian H, Kuhn E, Liebler DC, MacCoss MJ, MacLean B, Mani DR, Neubert H, Smith D, Vitek O, and Zimmerman L. (2017) New Guidelines for Publication of Manuscripts Describing Development and Application of Targeted Mass Spectrometry Measurements of Peptides and Proteins. *Mol Cell Proteomics.* (In Press)
2. Annesley TM, Cooks RG, Herold DA, **Hoofnagle AN**. (2016) Clinical Mass Spectrometry-Achieving Prominence in Laboratory Medicine. *Clin Chem.* **62**(1):1-3.
3. Durazo-Arvizu RA, Camacho P, Bovet P, Forrester T, Lambert EV, Plange-Rhule J, **Hoofnagle AN**, Aloia J, Tayo B, Dugas LR, Cooper RS, and Luke A. (2015) Reply to T Weishaar. *Am J Clin Nutr.* **101**(2):413-4.
4. * Grant RP and **Hoofnagle AN**. (2014) From Lost in Translation to Paradise Found: Enabling Protein Biomarker Method Transfer by Use of Mass Spectrometry. *Clin Chem.* **60**(7):941-4
5. Di Meo AD, Diamandis EP, Rodriguez H, **Hoofnagle AN**, Ioannidis J, and Lopez M. (2014) What Is Wrong with Clinical Proteomics? *Clin Chem.* **60**(10):1258-66
6. **Hoofnagle AN**, Aebersold R, Anderson NL, Felsenfeld A, and Liebler DC. (2011) Painting a moving picture: large-scale proteomics efforts and their potential for changing patient care. *Clin Chem.* **57**:1357-60.
7. **Hoofnagle AN**. (2010) Peptide lost and found: internal standards and the mass spectrometric quantification of peptides. *Clin Chem.* **56**:1515-7.
8. Simons SA, Molinelli AR, Sobhani K, Rainey PM, and **Hoofnagle AN**. (2009) Two Cases with Unusual Vancomycin Measurements. *Clin Chem.* **55**:578-80.

9. Walter RB, **Hoofnagle AN**, Lanum SA, and Collins SJ. (2006) Acute, life-threatening hypoglycemia associated with haloperidol in a hematopoietic stem cell transplant recipient. *Bone Marrow Transplant*. **37**:109-10.
10. **Hoofnagle AN**. (2005) Error by an Impaired Staff Member. *Laboratory Errors & Patient Safety*. **5**:8-9.

PATENTS

Hoofnagle AN and Wener MH. (2010) “Methods and Compositions for Detecting Thyroglobulin in a Biological Sample.” U.S. Patent Number 7,807,172.

FORMAL PRESENTATIONS

1. Invited speaker (January 2017) “A Multiplexed Assay to Identify CYP24A1 Deficiency.” Mass Spectrometry: Applications to the Clinical Laboratory Annual Meeting, Palm Springs, CA.
2. Invited speaker (January 2017) “Kidney function is associated with changes in HDL composition.” Diabetes and Metabolism Seminar Series, University of Washington, Seattle, WA.
3. Invited speaker (November 2016) “Affinity Enrichment.” Sample Preparation ASMS Fall Workshop, Baltimore, MD.
4. Invited speaker (November 2016) “Clinical Biomarkers.” Sample Preparation ASMS Fall Workshop, Baltimore, MD.
5. Invited speaker (October 2016) “Using Mass Spectrometry to Care for Patients.” West and Midwest Chairs and Administrators Regional Conference, Maui, HI.
6. Invited speaker (September 2016) “Perspectives From a Clinical Laboratory.” Iron Screening and Supplementation in Iron-replete Pregnant Women and Young Children, Public Workshop at the National Institutes of Health, Bethesda, MD.
7. Invited speaker (May 2016) “Keynote Address: Using Mass Spectrometry to Help Patients.” Mass Spectrometry in the Clinic: Regulatory Considerations Surrounding Validation of Liquid Chromatography-Mass Spectrometry Based Devices, Public Workshop at the Food and Drug Administration, Silver Spring, MD.
8. Invited speaker (April 2016) “Multiplexed Vitamin D Metabolite Assay and Column Regeneration.” Waters Users’ Group Meeting, San Francisco, CA
9. Invited speaker (March 2016) “Quantification Of Vitamin D-binding Protein By Liquid Chromatography-tandem Mass Spectrometry: Implications For The Assessment Of Bioavailable Vitamin D Concentrations Across Genotypes.” Vitamin D Workshop, Boston, MA.

10. Invited speaker (March 2016) “Replacing Protein Immunoassays with LC-MS/MS.” Symposium on Mass Spectrometry in the Modern Clinical Laboratory, University of California, San Deigo, CA.
11. Invited speaker (February 2016) “Gingerbread Men: A Cookie-cutter Bottom-up Proteomics Workflow for the Hungry?” Mass Spectrometry: Applications to the Clinical Laboratory Annual Meeting, Palm Springs, CA.
12. Invited speaker (November 2015) “Why Patients Adore Mass Spectrometry.” Seminar Series at Sahlgrenska Academy, Gothenburg, Sweden.
13. Invited speaker (October 2015) “Taking Advantage of Mass Spectrometry in the Care of Patients.” Special Seminar at Food and Drug Administration (CDRH), Silver Spring, MD.
14. Invited speaker (October 2015) “Pigs ‘n Blankets: Mass Spectrometry and the Continuum of Human Health.” Clinical and Pharmaceutical Solutions through Analysis Annual Meeting, Langhorne, PA.
15. Invited speaker (September 2015) “How Far Should Assay Validation Go in a Tiered Environment?” Crystal City VI: BMV on Biomarkers [Sponsored by the Food and Drug Administration (CDER) and the American Association of Pharmaceutical Sciences], Baltimore, MD.
16. Invited speaker (September 2015) “Why Patients Adore Mass Spectrometry.” Mass Spectrometry: Applications to the Clinical Laboratory EU Annual Meeting, Salzburg, Austria.
17. Invited speaker (August 2015) “How Mass Spectrometers Help Patients.” Special Seminar at Cambridge Isotopes, Tewksbury, MA.
18. Invited speaker (June 2015) “Quantifying VDBG by LC-MS/MS.” Vitamin D Standardization Program Annual Meeting, Cambridge, UK.
19. Invited speaker (May 2015) “Moving from Biomarker Discovery to Clinical Utility.” Waters-Tufts Scientific Executive Summit, Boston, MA.
20. Invited speaker (February 2015) “Quantifying Proteins in Clinical Samples by LC-MS/MS.” Special Seminar at St. Paul’s Hospital, Vancouver, BC.
21. Invited speaker (December 2014) “Measurement of 25(OH)D: Perspective From the Clinical Lab.” Vitamin D: moving toward evidence-based decision making in primary care, sponsored by NIH, Bethesda, MD.
22. Invited speaker (October 2014) “Using Mass Spectrometry to Measure Proteins in the Clinical Laboratory.” AACC Conference on Clinical Mass Spectrometry, St. Louis, MO.
23. Invited speaker (October 2014) “Helping the Clinical Lab Help Patients.” Clinical and Pharmaceutical Solutions through Analysis Annual Meeting, Langhorne, PA.

24. Invited speaker (October 2014) “Helping the Clinical Lab Help Patients.” Clinical and Pharmaceutical Solutions through Analysis Annual Meeting, Langhorne, PA.
25. Invited speaker (June 2014) “Prioritizing Our Validation Efforts.” Proteomics in the Clinic (Hosted by the FDA). Silver Spring, MD.
26. Invited speaker (June 2014) “A Clinicopathologic Correlation (CPC) in Pain Medicine Testing.” Laboratory Medicine Grand Rounds at the University of Washington. Seattle, WA.
27. Invited speaker (May 2014) “If It’s Broke, Why Not Fix It? How Mass Spectrometry Can Make the Most of Our Precious Samples.” Advancing translational research Using mass spectrometry (Hosted by the Duke Proteomics Core Facility with Support From the Duke Translational Research Institute). Durham, NC.
28. Invited speaker (April 2014) “Validation Approaches and Requirements” NCI’s Clinical Proteomic Technologies for Cancer: Think Tank. Bethesda, MD.
29. Invited speaker (March 2014) “Why Should I Use Mass Spectrometry to Measure Vitamin D?” American Society for Clinical Pathology Webinar Series.
30. Invited speaker (March 2014) “What Contributes to Inter-laboratory Variability of Targeted Protein LC-MS/MS Assays: A Case Study Using IGF-1.” Mass Spectrometry: Applications to the Clinical Laboratory Annual Meeting, San Diego, CA.
31. Invited speaker (November 2013) “Developing a Mini-validation Guidance Document for Novel LC-MRM/MS Assays.” Clinical Proteomics Tumor Analysis Consortium Annual Meeting, Bethesda, MD.
32. Invited speaker (November 2013) “Why Should We Use Mass Spectrometry to Measure Vitamin D Metabolites?” Vitamin D Standardization Program Symposium: Tools to Improve Laboratory Measurement, Gaithersburg, MD.
33. Invited speaker (November 2013) “UDT – How the Lab Can Help” Meeting the Challenge of Chronic Pain Management, Shoreline, WA.
34. Invited speaker (October 2013) “Perspectives on Assays with Short Turn-Around Time” Clinical and Pharmaceutical Solutions through Analysis Annual Meeting, Langhorne, PA.
35. Invited speaker (July 2013) “The Why and How-To of Using LCMS to Measure Proteins” Annual Meeting of the American Association for Clinical Chemistry, Houston, TX.
36. Invited speaker (July 2013) “What Proteomics Can Learn From Metabolomics” Annual Meeting of the American Association for Clinical Chemistry, Houston, TX.
37. Invited speaker (July 2013) “Why Should We Use Mass Spectrometry to Measure Vitamin D Metabolites?” Annual Meeting of the American Association for Clinical Chemistry, Houston, TX.

38. Invited speaker (June 2013) “A Wide Spectrum: Clinical Diagnostics for the Masses” Annual Meeting of the American Association for Mass Spectrometry, Minneapolis, MN.
39. Invited speaker (June 2013) “What Can My Spectrometer Do for Me?” Annual Meeting of the Academy of Clinical Laboratory Physicians and Scientists, Atlanta, GA.
40. Invited speaker (June 2013) “Targeted Peptide Measurements in Biology and Medicine: What Are the Options?” Targeted Peptide Measurements in Biology and Medicine: Best Practices for Assay Development Using a “Fit-for-Purpose” Approach. Bethesda, MD.
41. Invited speaker (March 2013) “External Calibration: Why Should I?” US Human Proteome Organization, Baltimore, MD.
42. Invited speaker (December 2012) “Biomarkers of Disease Progression in Type 1 Diabetes” Diabetes Research Center/Nutrition Obesity Research Center Retreat, Seattle, WA.
43. Invited speaker (November 2012) “Quantifying Proteins in Mixtures is Complex” Southeastern Regional Meeting of the American Chemical Society, Raleigh, NC.
44. Invited speaker (October 2012) “Measuring Proteins by LC-MS in Clinical Samples” Mass Spectrometry: The expanding role in Life Sciences and Diagnostics (sponsored by Tecan, Inc.), Boston, MA.
45. Invited speaker (July 2012) “Quality Control for Liquid Chromatography-Mass Spectrometry: Reading the Signs” Annual Meeting of the American Association for Clinical Chemistry, Los Angeles, CA.
46. Invited speaker (July 2012) “Progress Toward the Quantification of Proteins in Clinical Samples by LC-MS/MS” Waters Workshop, Los Angeles, CA.
47. Invited speaker (May 2012) “Proper calibration can improve accuracy and precision of targeted proteomics assays.” Annual Meeting of the American Society for Mass Spectrometry, Vancouver, BC.
48. Invited speaker (January 2012) “Progress Toward the Quantification of Proteins in Clinical Samples by LC-MS/MS.” Mass Spectrometry: Applications to the Clinical Laboratory. San Diego, CA.
49. Invited speaker (December 2011) “Measuring Proteins by Mass Spectrometry.” Partnership for Clean Competition Annual Meeting. New York, NY.
50. Invited speaker (September 2011) Novel Roles for Mass Spectrometry in the Clinical Laboratory” Triangle Area Mass Spectrometry Discussion Group. Raleigh, NC.
51. Invited speaker (August 2011) “Quantifying Proteins by LC-MS/MS.” Next Generation Diagnostics Summit. Washington, DC.

52. Invited speaker (July 2011) "Applications of Tandem Mass Spectrometry for Proteomic Clinical Diagnostics." 2011 Meeting of the American Association for Clinical Chemistry. Atlanta, GA.
53. Invited speaker (March 2011) "Quantifying Proteins by LC-MS/MS: Lessons From the Apolipoproteins." Special seminar, Biodesign Institute. Phoenix, AZ.
54. Invited speaker (January 2011) "Quantifying Proteins by LC-MS/MS." Special seminar, Department of Laboratory Medicine and Pathology. Minneapolis, MN.
55. Invited speaker (November 2010) "Serum Protein Quantification by LC-MS/MS: Apolipoproteins and Thyroglobulin." Practical Applications of Mass Spectrometry in the Clinical Laboratory, Baltimore, MD.
56. Invited speaker (October 2010) "LC-MS/MS and the Clinical Laboratory: Examples from Endocrinology." 2010 Annual Meeting of the American Society of Clinical Pathology, San Francisco, CA.
57. Invited speaker (October 2010) "Quantifying Proteins by LC-MS/MS." Path Presents Seminar Series, Department of Pathology, University of Washington, Seattle, WA.
58. Invited speaker (October 2010) "Quantifying Proteins in Clinical Samples by LC-MS/MS." Clinical Diagnostics Summit, BioConference Live, Seattle, WA (online).
59. Invited speaker (October 2010) "Developing Targeted Assays Using Mass Spectrometry." Kidney Research Institute - Scientific Advisory Committee Meeting. Seattle, WA.
60. Invited speaker (October 2010) "Quantifying Proteins by LC-MS/MS." 2010 Fall Meeting of the Ohio River Valley Section of AACC, Indianapolis, IN.
61. Invited speaker (October 2010) "Quantifying Proteins in Clinical Samples by LC-MS." 9th Annual Symposium of the US Anti-Doping Association, Leesburg, VA.
62. Invited speaker (July 2010) "Quantifying Proteins by LC-MS/MS." 2010 Meeting of the American Association of Clinical Chemistry, Anaheim, CA.
63. Invited speaker (March 2010) "Clinical Laboratory Assays by Quantitative Mass Spectrometry." Annual Meeting of the US Human Proteome Organization. Denver, CO.
64. Invited speaker (February 2010) "Lipoproteomics in Obesity and Insulin Resistance." Mass Spectrometry: Applications to the Clinical Laboratory 2010. San Diego, CA.
65. Invited speaker (December 2009) "Proteomics of Lipoproteins and Macrophages: An Expanding Role for Complement Regulation in Atherosclerosis." Research Seminar. Department of Laboratory Medicine and Pathology, Yale University, New Haven, CT.

66. Invited speaker (November 2009) "Clinically Quantifying Low-abundance Serum Proteins by LC-MS/MS: Potential Benefits and a Case Study." Clinical Proteomic Technologies for Cancer 2009 Annual Meeting, Sponsored by the National Cancer Institute. Bethesda, MD.
67. Invited speaker (October 2009) "Biomarkers in Atherosclerosis: What Lies in HDL." Kidney Research Institute - Scientific Advisory Committee Meeting. Seattle, WA.
68. Invited speaker (July 2009) "Clinical Lipoproteomics Unveils Clusterin as a Novel Biomarker of Insulin Resistance." Special Awards Ceremony, National Academy of Clinical Biochemistry, Chicago, IL.
69. Invited speaker (July 2009) "Serum Tumor Marker Quantification by LC-MS/MS: Is There Hope?" 2009 Meeting of the American Association of Clinical Chemistry, Chicago, IL.
70. Invited speaker (June 2009) "Proteomics and Biomarker Discovery: The Challenge of Human Plasma Proteomics." Special Seminar in Biochemistry, Department of Chemistry and Biochemistry, University of Colorado, Boulder, CO.
71. Invited speaker (June 2009) "Clusterin is depleted from HDL in obesity and insulin resistance." Special Seminar in Endocrinology, Division of Endocrinology, Metabolism and Diabetes, University of Colorado Denver, Denver, CO.
72. Invited speaker (November 2008) "Serum Simplification Using Density Gradient Ultracentrifugation and Anti-Peptide Antibodies." Current Topics in Cloning and Protein Expression, San Diego, CA.
73. Invited speaker (November 2008) "Tumor Marker Quantification by Mass Spectrometry: First Steps with Thyroglobulin." Mass Spectrometry: Applications to the Clinical Laboratory, San Diego, CA.
74. Invited speaker (August 2008) "Towards Serum Protein Quantification by Mass Spectrometry." Annual Meeting of the Association for Medical Laboratory Immunologists, Seattle, WA.
75. Invited speaker (July 2008) "Serum Tumor Marker Quantification by Mass Spectrometry: Is There Hope?" Seminar in Clinical Chemistry, Department of Pathology, University of Utah, Salt Lake City, UT.
76. Invited speaker (May 2008) "Biomarkers of Atherogenesis in SLE." Scientific Collaborative Meeting, Alliance for Lupus Research, New York, NY.
77. Invited speaker (September 2007) "Clinical Tumor Marker Quantitation with LC/MS/MS: Is There Hope?" Asilomar Conference, American Association for Mass Spectrometry, Asilomar, CA.

78. Invited speaker (June 2007) "Hospital-wide Intensive Insulin Therapy: What Can We Learn from Laboratory Data?" Annual Meeting of the Academy of Clinical Laboratory Physicians and Scientists, San Diego, CA.
79. Invited speaker (November 2006) "Thyroglobulin Autoantibodies Revisited." Special Seminar, Department of Pathology and Laboratory Medicine, Mayo Clinic, Rochester, MN.
80. Invited speaker (June 2006) "Using a Secure Internet Accessible Database to Document Calls to Clinical Pathology Residents and to Improve Laboratory Medicine Education." Annual Meeting of the Academy of Clinical Laboratory Physicians and Scientists, Chicago, IL.
81. Invited speaker (June 2006) "Detection and preliminary characterization of an isobaric interfering substance in the liquid chromatographic-tandem mass spectrometric quantitation of urine anabasine, a marker of tobacco exposure." Annual Meeting of the Academy of Clinical Laboratory Physicians and Scientists, Chicago, IL.
82. Invited speaker (February 2005) "State of the art: Mass spectrometry in the clinical laboratory." Grand Rounds, University of Washington, Department of Laboratory Medicine, Seattle, WA.
83. Invited speaker (July 2001) "Changes in Conformational Flexibility in the Protein Kinase ERK2 Following Phosphorylation and Activation." National M.D/Ph.D. Student Conference, Aspen, CO.
84. Invited speaker (July 1999) "Using hydrogen exchange-mass spectrometry and pepsin mapping to probe secondary structure in ERK2." 41st Rocky Mountain Conference on Analytical Chemistry, Denver, CO.

ABSTRACTS/POSTERS

Netzel BC, Grebe SK, Becker JO, **Hoofnagle AN**, Clark PM, and Algeciras-Schimmich A. (March 2015) "Evaluation of Two LC-MS/MS Thyroglobulin Assays Performance in the Presence of Anti-thyroglobulin Autoantibodies." Annual Conference on Mass Spectrometry: Applications to the Clinical Laboratory, San Diego, CA.

Hoofnagle AN and the Assay Development Working Group (November 2013) "Developing a Mini-validation Guidance Document for Novel LC-MRM/MS Assays." First Clinical Proteomics Tumor Analysis Consortium Annual Meeting, Bethesda, MD.

Hoofnagle AN, Wu M, Becker JO, Brunzell JD, Kahn SE, Knopp RH, Lyons T, and Heinecke JW. (July 2009) "Clinical Lipoproteomics Unveils Clusterin as a Novel Biomarker of Insulin Resistance." 2009 Meeting of the American Association of Clinical Chemistry, Chicago, IL.

Hoofnagle AN, Wu M, Becker JO, Lyons T, Knopp RH, and Heinecke JW. (August 2008) "HDL Proteomic Changes in Insulin Resistance, Obesity, and Diabetes." 2008 Kern Aspen Lipid Conference, Aspen, CO.

Hoofnagle AN, Becker JO, Wener MH, and Heinecke JW. (July 2008) “Quantification of Serum Tumor Markers: Immunoaffinity Peptide Purification and Tandem Mass Spectrometry.” 2008 Meeting of the American Association of Clinical Chemistry, Washington, DC.

Hoofnagle AN, Vaisar T, LeBoeuf RC, and Heinecke JW. (March 2008) “Critical role of macrophage-derived complement factor C3 in atherogenesis.” 2008 Deuel Conference on Lipids, San Diego, CA.

Hoofnagle AN, Vaisar T, Green PS, and Heinecke JW. (August 2007) “Interplay between macrophage-derived complement factor C3 and HDL in atherogenesis.” 2007 Kern Aspen Lipid Conference, Aspen, CO.

Hoofnagle AN, Wood LF, and Wener M. (July 2006) “Reducing autoantibody interference in thyroglobulin testing.” 2006 Meeting of the American Association of Clinical Chemistry, Chicago, IL.

Hoofnagle AN, Laha T, Rainey PM, and Sadrzadeh SMH. (September 2005) “Rapid specimen preparation for the detection of nicotine and metabolites in urine using liquid chromatography-tandem mass spectrometry.” 2005 Annual Meeting of the College of American Pathologists, Chicago, IL.

Hoofnagle AN, Laha T, Rainey PM, and Sadrzadeh SMH. (July 2005) “A rapid sample preparation technique for the LC/MS/MS quantitation of nicotine and metabolites in urine.” 2005 Annual Meeting of the American Association for Clinical Chemistry, Orlando, FL.

Hoofnagle AN, Stoner JW, Eaton SS, and Ahn NG. (July 2002) “Site directed spin labeling and continuous wave EPR detect phosphorylation induced changes in conformational mobility in the protein kinase ERK2.” 25th International EPR Symposium at the 44th Rocky Mountain Conference on Analytical Chemistry, Denver, CO.

Hoofnagle AN, Resing KA, Goldsmith EJ, and Ahn NG. (August 2001) “Changes in Conformational Flexibility in the Protein Kinase ERK2 Following Phosphorylation and Activation.” Gordon Conference—Enzymes, Co-enzymes, and Metabolic Pathways, Meriden, NH.

Hoofnagle AN, Resing KA, Goldsmith EJ, and Ahn NG. (August 2000) “Changes in Conformational Flexibility in the Protein Kinase ERK2 Following Phosphorylation and Activation.” Meeting of the Protein Society, San Diego, CA.

PRESS COVERAGE

“Theranos founder’s conference invitation sparks row among scientists” *Financial Times*,
Interviewed by David Crow, Publication date: 08/04/2016.

“Mass Spec Welcome In Clinical Labs” *Chemical and Engineering News*, **93**:32-34. Interviewed
by Celia Henry Arnaud, Publication date: 2015.

“New platform for cataloging hundreds of proteins gets test drive” *Nature Medicine*, **20**:1082–
1083. Interviewed by Kendall Powell, Publication date: 2014.

“Despite legal pot, clean urine still needed for some employers” KIRO Radio (Local TV and Radio Station in Seattle). Interviewed by Zak Burns, MyNorthwest posting date: 03/21/2014.

“New Guidelines For Vitamin D” KUOW News (Seattle Public Radio Station). Interviewed by Patricia Murphy, Air Date: 12/01/2010.

“Simultaneous Quantification of Apolipoprotein A-I and Apolipoprotein B by Liquid Chromatography-Multiple Reaction Monitoring/Mass Spectrometry” Clinical Chemistry (Podcast). Interviewed by Bob Barrett.

“Quantification of 1 α ,25-Dihydroxy Vitamin D by Immunoextraction and Liquid Chromatography-Tandem Mass Spectrometry” Clinical Chemistry (Podcast). Interviewed by Bob Barrett.