## UNIVERSITY OF PENNSYLVANIA - PERELMAN SCHOOL OF MEDICINE <u>Curriculum Vitae</u>

### Date: 04/18/2022

## Stephen R. Master, MD, PhD

| Address:   |            |  | spital of Philadelphia<br>c Center Blvd., Room 5145   |
|--|------------|--|---|
|  |            | Philadelphia,                            | PA 19104-4399 USA   |
| <u>If you are not a l</u>                          | J.S. citiz | <u>en or holder of</u><br>none (U.S. cit | f a permanent visa, please indicate the type of visa you have:<br>izen)   |
| Education:   |            |  |   |
|  | 1990       | A.B.                                     | Princeton University (Molecular Biology)  |
|  | 2001       | Ph.D.                                    | University of Pennsylvania School of Medicine (Cell and Molecular Biology)  |
|  | 2002       | M.D.                                     | University of Pennsylvania School of Medicine (Medicine)  |
|  | 2011       | M.S.T.R.                                 | University of Pennsylvania (Translational Research)   |
| Postgraduate Training and Fellowship Appointments: |            |  |   |
|  | 2002-2     | 2004                                     | Resident in Clinical Pathology, Hospital of the University of Pennsylvania, Philadelphia  |
| Faculty Appoint                                    | nents:     |  |   |
| <u>,</u>   | 2004-2     | 2005                                     | Research Associate, University of Pennsylvania School of<br>Medicine Department of Pathology and Laboratory Medicine,<br>University of Pennsylvania             |
|  | 2005-2     | 2015                                     | Assistant Professor of Pathology and Laboratory Medicine at<br>the Hospital of the University of Pennsylvania, University of<br>Pennsylvania School of Medicine |
|  | 2015-2     | 2017                                     | Associate Professor, Weill Cornell Medical College  |
|  | 2018-p     | present                                  | Associate Professor of Pathology and Laboratory Medicine at   |
|  |            |  | the Children's Hospital of Philadelphia, University of  |
|  |            |  | Pennsylvania School of Medicine   |
| Hospital and/or Administrative Appointments:       |            |  |   |

#### Hospital and/or Administrative Appointments:

| 2003-2004 | Chief Resident in Clinical Pathology, Department of          |
|-----------|--|
|           | Pathology and Laboratory Medicine, Hospital of the           |
|           | University of Pennsylvania, Philadelphia                     |
| 2005-2015 | Attending Physician, Clinical Chemistry Laboratory, Hospital |
|           | of the University of Pennsylvania                            |
| 2008-2015 | Attending Physician, Penn Presbyterian Medical Center        |
| 2008-2015 | Attending Physician, Pennsylvania Hospital                   |
| 2008-2015 | Director, Endocrinology Laboratory, Hospital of the          |
|           | University of Pennsylvania                                   |
|           |  |

|                    | 2014-2015                 | Director, Endocrinology Section, Clinical Chemistry Core<br>Lab, Children's Hospital of Philadelphia                               |
|--------------------|---------------------------|--|
|                    | 2015-2017                 | Associate Attending Pathologist, Weill Cornell Medical<br>Center, New York Presbyterian  |
|                    | 2015-2017                 | Director, Central Laboratory, Weill Cornell Medical Center,<br>New York Presbyterian   |
|                    | 2015-2017                 | Chief, Clinical Chemistry Laboratory Services, Weill Cornell<br>Medical Center, New York Presbyterian                              |
|                    | 2016-2017                 | Laboratory Director (CLIA License Holder), New York<br>Presbyterian Hospital Westchester   |
|                    | 2018-present<br>2018-2019 | Attending Physician, Children's Hospital of Philadelphia<br>Director, Central Lab Services, Children's Hospital of<br>Philadelphia |
|                    | 2019-present              | Director, Michael Palmieri Laboratory for Metabolic and<br>Advanced Diagnostics, Children's Hospital of Philadelphia               |
|                    | 2019-present              | Chief, Division of Laboratory Medicine, Children's Hospital of Philadelphia  |
| Other Appointme    | ents:                     |  |
|                    | 2005-2015                 | Member, Graduate Group, Genomics and Computational<br>Biology, University of Pennsylvania School of Medicine                       |
|                    | 2010-2015                 | Director, Translational Core Laboratory, Perelman School of<br>Medicine, University of Pennsylvania                                |
|                    | 2012-2015                 | Director, Penn Diabetes Research Center RIA/Biomarkers<br>Core, Perelman School of Medicine, University of<br>Pennsylvania         |
|                    | 2018-present              | Member, Institute for Biomedical Informatics, Perelman<br>School of Medicine, University of Pennsylvania                           |
| Specialty Certific | ation:                    |  |
|                    | 2004<br>2017              | American Board of Pathology (Clinical Pathology)<br>American Board of Pathology (Clinical Informatics)                             |
| Licensure:         |                           |  |
|                    | 2004-present<br>2014      | Pennsylvania<br>New York   |
| Awards, Honors     | and Membership in Ho      | norary Societies:  |
|                    | 1989-1990                 | NSF Summer Undergraduate Research Fellowship   |
|                    | 1990<br>1991              | Cum laude in Molecular Biology, Princeton University<br>Dean's Letter of Commendation, SUNY at Buffalo School of<br>Medicine       |
|                    | 1996-1999                 | DOD Breast Cancer Predoctoral Training Award   |
|                    | 2001                      | Endocrine Society Medical Student Achievement Award,<br>University of Pennsylvania School of Medicine                              |
|                    | 2001                      | Endocrine Society Travel Award   |

| 2003      | Best Scientific Session, Microarray and Tissue Array      |
|-----------|---|
|           | Analysis, APIII 2003                                      |
| 2004      | William Pepper Fellowship Award in Laboratory Medicine,   |
|           | Hospital of the University of Pennsylvania                |
| 2013      | American Association for Clinical Chemistry 2013 Division |
|           | Achievement Award for "Advancing the Profession"          |
| 2013      | 2012 Outstanding Speaker Award, American Association for  |
|           | Clinical Chemistry  |
| 2015-2016 | Weill Cornell Healthcare Leadership Fellowship Award      |
|           | Weill Cornell Medical Center, New York Presbyterian       |
| 2016      | 2015 Outstanding Speaker Award                            |
|           | American Association for Clinical Chemistry               |
| 2019      | Trailblazers of the Lab: The Power List 2019,             |
|           | thepathologist.com  |
|           | (https://thepathologist.com/power-list/2019)              |
|           |   |

Memberships in Professional and Scientific Societies and Other Professional Activities: International: 2004-2005 International Society for Computational Biology (Member 2017) 2005-2009 Human Proteome Organization (Member) 2013-Present International Consortium for Harmonization of Clinical Laboratory Results (ICHCLR) (committee member, Harmonization Oversight Group 2013-Present) 2018-Present Society for the Study of Inborn Errors of Metabolism National: 2000-Present American Association for the Advancement of Science (Member) 2004-Present American Association for Clinical Chemistry (President 2021-2022 President-Elect 2020-2021 Board of Directors 2017-2019 House of Delegates Chair 2014; House of Delegates Chair Elect 2013; Proteomics and Metabolomics Division Chair 2013-2014; Proteomics Division Chair Elect 2011-2012; Informatics Division Executive Committee Member 2017-present; OMICS consensus working group 2012; Proteomics Division Executive Committee Member 2008-2016; Proteomics Division Secretary 2008-2009; Proteomics Division Nominating committee 2006-2007 Editorial Advisory Board, Strategies, 2006-2009) 2005-2006 American Society for Biochemistry and Molecular Biology (Member)

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| 2005-present                  | American Society for Mass Spectrometry (Member)  |   |  |  |
|-------------------------------|--|---|--|--|
| 2005-present                  | College of American Pathologists (Fellow)  |   |  |  |
| 2006-present                  | Academy of Cli   | inical Laboratory Physicians and Scientists (Member)  |  |  |
| 2006-2007                     | American Socie   | ety for Investigative Pathology (Member)  |  |  |
| 2009                          |  | National Institutes of Health (NCRR) (Study Section Reviewer: Mass Spectrometry<br>Instruments Review Panel)  |  |  |
| 2010                          | National Institu<br>Immunity for B   | tes of Health (NIAID) (Review Section Member: "Modeling iodefense")   |  |  |
| 2014-Present                  | National Acade   | my of Clinical Biochemistry (Fellow)  |  |  |
| <u>Local:</u><br>2005-Present | Chair 2011<br>Past Chair 2012  | ciation for Clinical Chemistry, Philadelphia Section (Chair-Elect 2010<br>2<br>ates Representative 2012)  |  |  |
| Editorial Position            | Editorial Positions:   |   |  |  |
|                               | 2005-Present<br>2005-Present<br>2006-Present<br>2006-Present<br>2008-Present<br>2008-Present | Journal of Molecular Diagnostics (reviewer)<br>Clinical Chemistry (reviewer)<br>DNA and Cell Biology (reviewer)<br>Breast Cancer Research (reviewer)<br>Journal of Proteome Research (reviewer)<br>Archives of Pathology and Laboratory Medicine (section editor for<br>clinical chemistry)<br>American Journal of Pathology (reviewer) |  |  |
|                               | 2008-Present<br>2010-Present   | BMC Cancer (reviewer)   |  |  |

| 2010-Present | American Journal of Obstetrics and Gynecology (reviewer) |  |
|--------------|--|--|

- 2010-Present American Journal of Obstetrics and Gynecology (reviewer) 2011-Present Clinical Chemistry (Board of Editors; Associate Editor, 2015-2019)
- 2013-Present Clinical Proteomics (Editorial Board; Associate Editor 2016-present)
- 2013-Present Cancer Research (Board of Editors)
- 2016-Present Clinical Mass Spectrometry; (Editorial Board)

## Academic and Institutional Committees:

| 2003-2010 | Institutional Review Board 2, University of Pennsylvania (Member) |
|-----------|---|
| 2005-2007 | Molecular Pathology Faculty Search Committee                      |
| 2006      | Genomics and Computational Biology Graduate Group Preliminary     |
|           | Exam Committee  |
| 2006-2015 | Genomics and Computational Biology Curriculum Committee           |
| 2007-2011 | Department of Pathology REACH Committee                           |

| Department of Pathology GME working group (Clinical Chemistry)      |
|---|
| EMR Executive Commitee (UPHS)                                       |
| Department of Pathology LIS working group (Chair)                   |
| Department of Pathology Research Samples working group              |
| Abramson Cancer Center CTSRMC (Member)                              |
| Institutional Review Board 4, University of Pennsylvania (co-Chair) |
| University of Pennsylvania Biobank Sample Processing                |
| subcommittee (Chair)  |
| University of Pennsylvania Biobank Informatics subcommittee         |
| (member)  |
| University of Pennsylvania Department of Pathology Molecular        |
| Genetics working group (member)                                     |
| University of Pennsylvania Department of Pathology Professional     |
| Development working group (member)                                  |
| Member, Clinical Informatics and Quality Committee, Weill Cornell   |
| Medical Center  |
| Co-Organizer, Weill Cornell Clinical Pathology Faculty Chalk Talk   |
| Series  |
| Member, Utilization Committee, Weill Cornell Medical Center         |
| Member, Masters in Biomedical Informatics Admissions                |
| Committee, University of Pennsylvania                               |
| Member, CHOP Peer Review Committee                                  |
| Member, CHOP Conflict of Interest Committee                         |
|   |

# Major Academic and Clinical Teaching Responsibilities:

| d | and Chinear reaching Responsionities. |   |  |  |
|---|---------------------------------------|---|--|--|
|   | 2003-2004                             | Teaching Assistant, General Pathology   |  |  |
|   | 2005-2014                             | Medical student lecture: "Anatomy, Development, and Physiology                  |  |  |
|   |                                       | of the Breast"  |  |  |
|   | 2005-2007                             | Resident Lecture: "Bioinformatics and Clinical Chemistry" (4x/yr starting 7/05) |  |  |
|   | 2006-2014                             | Course Co-Director: GCB535 Introduction to Bioinformatics                       |  |  |
|   |                                       | (co-director + 10 lectures)   |  |  |
|   | 2006-2007                             | Graduate/Fellow Lectures: "Introduction to Bioinformatics",                     |  |  |
|   |                                       | "Introduction to Proteomics" (3 hrs)  |  |  |
|   | 2006-2010                             | Graduate Student Thesis supervisor, Logan Everett                               |  |  |
|   | 2006-2014                             | Lecturer, MTR 603: 3 hours  |  |  |
|   | 2006-2014                             | Course co-Director (as of 2012): MTR603, Laboratory Diagnostics                 |  |  |
|   |                                       | (currently give 6 lectures)   |  |  |
|   | 2007                                  | Post-Doctoral Lecture: "Introduction to Proteomics" (2 hrs)                     |  |  |
|   | 2007-2014                             | Resident Lecture: Blood Gases and Acid/Base balance (1x/quarter)                |  |  |
|   | 2007-2008                             | Clinical Pathology Resident Lecture, Introduction to Statistics                 |  |  |
|   | 2007                                  | Clinical Pathology Resident Lecture, Introduction to Bioinformatics             |  |  |
|   | 2008-2010                             | Post-doctoral supervisor, Charlene Bierl MD PhD                                 |  |  |
|   | 2011-2015                             | Resident Core Curriculum Lectures: Introduction to Bioinformatics               |  |  |
|   |                                       | (4 hrs total)   |  |  |
|   | 2015-2017                             | Faculty Director, Resident Management Course (1 month rotation),                |  |  |
|   |                                       |   |  |  |

|                  |  | Weill Cornell Medical Center   |
|------------------|--|--|
|                  | 2015-2016                                | Resident Lecture, "Introduction to the Central Lab" (1 hr./year)   |
|                  |  | Weill Cornell Medical Center   |
|                  | 2016-2017                                | Resident Informatics Lectures, "R for Pathologists" (12 hours)Weill  |
|                  |  | Cornell Medical Center   |
|                  | 2016-2017                                | Resident Lectures: "Why Lab Management Matters", Lab Stats 1",   |
|                  |  | Lab Stats 2", "Validation of QC" (4 hours), Weill Cornell Medical  |
|                  |  | Center   |
|                  | 2016-2017                                | Resident RISE review session (1 hour), Weill Cornell Medical<br>Center   |
|                  | 2016-2017                                | Medical Student Lecture: "Introduction to the Clinical Lab"  |
|                  |  | (1hr./year), Weill Cornell Medical Center  |
|                  | 2017                                     | Resident Informatics Lectures, "R for Pathologists" (12 Hours),  |
|                  |  | Weill Cornell Medical Center   |
|                  | 2017                                     | Resident Lectures: "Why Lab Management Matters", "Lab Stats 1",<br>"Lab Stats 2", "Validation and QC" (4 hours), Weill Cornell Medical |
|                  | 2010                                     | Center   |
|                  | 2018                                     | CHOP faculty/staff education, "A Newbie's Introduction to the  |
|                  | <b>2</b> 010 D                           | R Statistical Programming Language"  |
|                  | 2019-Present                             | Lecture, "A (Brief) Introduction to Data Science for Laboratory  |
|                  | 2010 Durant                              | Medicine", CHOP Pathology Informatics Course   |
|                  | 2019-Present                             | MBG/CBG Fellows lecture, "Introduction to Laboratory   |
|                  |  | Regulation", 1x  |
| Lectures by Invi | itation                                  |  |
|                  | Jun, 2005                                | "E Pluribus Unum: clinical quality control for genomic and   |
|                  | , 2000                                   | proteomic assays", Pittsburgh, PA, Academy of Clinical Laboratory  |
|                  |  | Physicians and Scientists 40th Annual Meeting  |
|                  | Oct, 2005                                | "E Pluribus Unum: Clinical Quality Control for Multiplex Proteomic   |
|                  | 000,2000                                 | Assays", Washington, D.C., American Association of Clinical  |
|                  |  | Chemistry Conference on "Proteomics: A New Diagnostic Frontier"  |
|                  | Dec, 2005                                | "Bioinformatics and quality control for genomic and proteomic  |
|                  | ,  | assays", Cairo, Egypt, 53rd Congress of the Egyptian Society for   |
|                  |  | Clinical Chemistry (plenary lecture)   |
|                  | Apr, 2006                                | "Pattern-based Diagnostic Algorithms and Clinical Quality Control",  |
|                  | 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1 | BioRad Laboratories, California  |
|                  | Sep, 2006                                | "Clinical Grade Quality Control for Multiplex Assays: Can We Do  |
|                  | 1,                                       | It?" IBC Biomarkers and Molecular Diagnostics conference, Boston,  |
|                  |  | MA (keynote)   |
|                  | Mar, 2007                                | Introduction to Clinical Research, GenNext Translational Research  |
|                  | ,  | Course, San Francisco, CA  |
|                  | Apr, 2007                                | "Robust data, robust algorithms: from preanalytical variability to   |
|                  | I /                                      | bioinformatic analysis", Genomic and Proteomic Sample Preparation  |
|                  |  | Conference (GOT Summit), Boston, MA (keynote)  |
|                  | Jan, 2008                                | "Prospects for Proteomics in the Clinical Laboratory: An Update",  |
|                  | -  | Egyptian Society for Clinical Chemistry 55th Scientific Conference,  |

|                   | Cairo, Egypt   |
|-------------------|--|
| Jun, 2008         | "Mining the 24-hour proteome", Advion BioSciences Users Group      |
| Juli, 2000        | Meeting, Denver, CO  |
| Nov, 2008         | "Quality Control for Proteomics", Mass Spectrometry Applications   |
| 1.0., 2000        | in the Clinical Laboratory (MSACL-08), UCSD, San Diego, CA         |
| Nov, 2008         | "Postanalytical Challenges for Multiplexed Biomarkers", Invitrogen |
| 1.0., 2000        | Current Topics Meeting, San Diego, CA                              |
| Sep, 2009         | "How many analytes? Optimizing multiplex assays for QC",           |
| Sep, 2009         | Athena Society, Porto Heli, Greece                                 |
| Oct, 2009         | "Quality Control for Multiplexed Clinical Assays", Roche GIN       |
|                   | Conference, Basel, Switzerland                                     |
| Jun, 2011         | "Keeping Multiplex Assays in Control", BioConference Live          |
| <i>v</i> an, 2011 | Clinical Diagnostics 2011, webcast                                 |
| Jun, 2011         | "Keeping Multiplex Assays in Control", Pathology Grand Rounds,     |
|                   | Temple University  |
| Jul, 2011         | "Beyond Westgard: Multiplex Mass Spectrometry in Control" (short   |
| ,                 | course), American Association for Clinical Chemistry, Atlanta, GA  |
| Jul, 2011         | "Keeping Multiplex Assays in Control", Pathology Grand Rounds,     |
| ) -               | University of Illinois at Chicago                                  |
| Sep, 2011         | "Keeping Multiplex Assays in Control", NIH, Bethesda, MD           |
| Jul, 2012         | "An Introduction to Bioinformatics for Clinical Chemists" (short   |
| ,                 | course), American Association for Clinical Chemistry, Los Angeles, |
|                   | CA   |
| Jul, 2012         | "Proteomics Plus", American Association for Clinical Chemistry,    |
|                   | Los Angeles, CA  |
| Jul, 2012         | "Beyond Westgard Rules: Quality Control for Multiplex Mass         |
|                   | Spectrometry" (short course), American Association for Clinical    |
|                   | Chemistry, Los Angeles, CA   |
| Nov, 2012         | "Good Antibodies, Bad Antibodies: Interference in Immunoassays",   |
|                   | AACC Southeast Section, Lexington, KY                              |
| Jul, 2013         | "Bioinformatics for Clinical Chemists" (short course), American    |
|                   | Association for Clinical Chemistry, Houston, TX                    |
| Feb, 2014         | "Too Much Information? Quality Control for Emerging Multiplex      |
|                   | Assays", University of Washington, Seattle, WA                     |
| Jul, 2014         | "Clinical laboratory quality for emerging multiplex biomarkers",   |
|                   | Weill Cornell Medical College, New York, NY                        |
| Mar, 2015         | "Breaking Up with Excel: A Newbie's Guide to the R Statistical     |
|                   | Programming Language" (2-day short course with Daniel Holmes),     |
|                   | Mass Spectrometry Applications in the Clinical Lab 2015, San       |
|                   | Diego, CA  |
| Jul, 2015         | "Big Data and the Clinical Laboratory", Society for Young Clinical |
|                   | Laboratorians", Atlanta, GA  |
| Sep, 2015         | "Developing MRM Transitions", Mass Spectrometry Applications       |
|                   | for the Clinical Lab EU, Salzburg, Austria                         |
| Sep, 2015         | "Quality Control for Multiplex Assays", HUPO World Congress        |
|                   | Clinical Day, Vancouver, British Columbia, Canada                  |

| Sep, 2015 | "Breaking Up with Excel: A Newbie's Guide to the R Statistical<br>Programming Language" (2-day short course with Daniel Holmes),   |
|-----------|--|
|           | Mass Spectrometry Applications in the Clinical Lab EU 2015,  |
|           | Salzburg, Austria  |
| Nov, 2015 | "Clinical Quality Control for Multiplex Assays", Chang Gung  |
|           | Memorial Hospital, Linkou, Taiwan  |
| Nov, 2015 | "Clinical Quality Control for Multiplex Assays", Mass Spectrometry<br>for Clinical Diagnosis 2015, National Sun Yat-Sen University,  |
|           | Kaohsiung, Taiwan  |
| Feb, 2016 | "Breaking Up with Excel: A Newbie's Guide to the R Statistical<br>Programming Language" (2-day short course with Daniel Holmes),<br>Mass Spectrometry Applications in the Clinical Lab 2016, Palm<br>Springs, CA |
| Aug, 2016 | Session Moderator, "Meet the Expert" session with Qualcomm<br>Tricorder XPRIZE Finalists, AACC 2017, San Diego, CA   |
| Aug, 2016 | Session Moderator, "Q&A with Qualcomm Tricorder XPRIZE<br>Finalists", AACC 2017, San Diego, CA   |
| Aug, 2016 | "Little Steps with Big Data: An Introduction to the R Statistical  |
|           | Programming Language" (4-hour short course with Daniel Holmes),<br>American Association for Clinical Chemistry, Philadelphia, PA   |
| Sep, 2016 | "Breaking Up with Excel: A Newbie's Guide to the R Statistical   |
|           | Programming Language" (2-day short course with Daniel Holmes),<br>Mass Spectrometry Applications in the Clinical Lab EU 2016,<br>Salzburg, Austria   |
| Sep, 2016 | "Automated Lab Result Reporting", Chinese Society for Laboratory<br>Medicine, Chongqing, China   |
| Nov, 2016 | "Quality Control in an Era of Complex Data", Asia-Pacific<br>Federation for Clinical Biochemistry, Taipei, Taiwan  |
| Nov, 2016 | "Breaking Up with Excel: A Newbie's Guide to the R Statistical   |
| 1.0.,2010 | Programming Language" (2-day short course with Daniel Holmes),<br>Asia-Pacific Federation for Clinical Biochemistry, Taipei, Taiwan  |
| Nov, 2016 | "Perspectives on Harmonization of the Analytical Phase", Ontario<br>Society for Clinical Chemistry Annual Scientific Meeting, Ontario,<br>Canada   |
| Jan, 2017 | "Breaking Up with Excel: A Newbie's Guide to the R Statistical<br>Programming Language" (2-day short course with Daniel Holmes),<br>Mass Spectrometry Applications in the Clinical Lab 2017, Palm                |
|           | Springs, CA  |
| Jan, 2017 | "Informatics Strategies for Multiplex Clinical Quality Control",<br>CHOP Hematopathology Grand Rounds, Philadelphia, PA  |
| Feb, 2017 | "Big Data in Medical Diagnostics", University of Pennsylvania<br>Association of Senior and Emeritus Faculty, Philadelphia, PA  |
| Mar, 2017 | "Bioinformatic Applications in Clinical Pathology", Pathology<br>Grand Rounds, Washington University St. Louis, MO   |
| Mar, 2017 | "Multiplex Clinical Quality Control for Emerging Diagnostics",<br>Beth Israel Deaconess Hospital, Boston, MA   |

| Jun, 2017              | "Bioinformatic Applications in Clinical Pathology", Children's       |
|------------------------|--|
| a <b>a</b> a1 <b>a</b> | Hospital of Philadelphia, Philadelphia, PA                           |
| Sep, 2017              | "Breaking Up with Excel: A Newbie's Guide to the R Statistical       |
|                        | Programming Language" (2-day short course with Daniel Holmes),       |
|                        | Mass Spectrometry Applications in the Clinical Lab EU 2017,          |
| a <b>a</b> a1 <b>a</b> | Salzburg, Austria  |
| Sep, 2017              | "Communicating with Physicians: Case Studies from the US             |
|                        | System", Chinese Society for Laboratory Medicine, Hongzhou,          |
| Nov, 2017              | China  |
|                        | "FDA/CLIA Requirements for Validation of Laboratory Developed        |
|                        | Tests in the USA", 29th World Congress of World Association of       |
|                        | Societies of Pathology and Laboratory Medicine (WASPaLM),            |
|                        | Kyoto, Japan   |
| Mar, 2018              | "Bioinformatic Applications in Clinical Pathology", Pathology        |
|                        | Grand Rounds, ARUP Laboratories (University of Utah), Salt Lake      |
|                        | City, UT   |
| May, 2018              | "Bioinformatics and Quality Control for Multiplex Oncology           |
|                        | Assays", Moffitt Cancer Center, Tampa, FL                            |
| Jul, 2018              | "Using R for Method Validation Studies", AACC Annual Meeting,        |
|                        | Chicago, IL  |
| Jul, 2018              | "Are you Feeding your Instruments the Right Water?", AACC            |
|                        | Annual Meeting, Chicago, IL  |
| Aug, 2019              | "R Showcase Demo", American Association for Clinical Chemistry       |
|                        | Annual Meeting, Anaheim, CA  |
| Aug, 2019              | "Getting Started with R for Laboratory Medicine: Stat of the Union", |
|                        | American Association for Clinical Chemistry Annual Meeting,          |
|                        | Anaheim, CA  |
| Nov, 2019              | "Big Data and AI in Laboratory Medicine", Best of AACC China,        |
|                        | Shanghai   |
| Nov, 2019              | "Data Quality Challenges for AI in Laboratory Medicine", Best of     |
|                        | AACC China, Shanghai   |
| Jan, 2020              | "Getting Started with R for Laboratory Medicine (and AP too!)"       |
|                        | (3-day resident/faculty short course), Weill Cornell Medicine, New   |
|                        | York   |
| Mar, 2020              | "Big Data and AI in Lab Medicine: Progress and Challenges",          |
|                        | Cleveland Clinic (RT-PLMI Grand Rounds), cancelled due to            |
|                        | COVID-19 pandemic  |
| Mar, 2020              | "Machine Learning: A Gentle Introduction" (one-day short course),    |
|                        | MSACL 2020, Palm Springs, cancelled due to COVID-19 pandemic         |
| Aug, 2020              | "Reproducible Data, Reproducible Analyses: A Model for Clinical      |
|                        | Laboratory Data Use", R/Medicine 2020, virtual conference due to     |
|                        | COVID-19   |
| Jan, 2021              | "A Shiny App for IFX Processing", Mass Spectrometry Applications     |
|                        | in the Clinical Lab, virtual lecture due to COVID-19.                |
| Mar, 2021              | "Machine Learning: A Gentle Introduction" (2-day short course with   |
|                        | Randall Julian), MSACL, online due to COVID-19                       |

| "Big Data and AI in Laboratory Medicine: Progress and             |
|---|
| Challenges", AACC New York Metro Section, virtual lecture due to  |
| COVID-19.   |
| "AACC's Perspective on the COVID-19 Pandemic", AACC India         |
| Section, virtual lecture due to COVID-19                          |
| "Big data and AI in Laboratory Medicine: Progress and Challenges" |
| (plenary), Korean Society for Laboratory Medicine, virtual due to |
| COVID-19  |
| "Big Data and AI in Laboratory Medicine: Progress and             |
| Challenges", AACC Upstate New York Section, Verona, NY            |
| "Big Data and Laboratory Medicine: Progress and Challenges", 47th |
| Annual Conference of Association of Clinical Biochemists of India |
| (ACBICON 2021), virtual presentation due to COVID-19              |
| "AACC's Perspective on the COVID-19 Pandemic", AACC Texas         |
| Local Section, Houston, TX (virtual due to COVID-19).             |
| "COVID-19 and the Clinical Lab: A view from AACC", AACC           |
| Rocky Mountain Local Section, Salt Lake City, UT (virtual due to  |
| COVID-19)   |
| "Big Data and AI in Laboratory Medicine: Progress and             |
| Challenges", AACC Southern California Local Section, Los          |
| Angeles, CA (virtual due to COVID-19)                             |
|   |

## Organizing Roles in Scientific Meetings:

| Dec, 2007       | co-organizer, CAMSI ("Critical assessment of mass spectral   |
|-----------------|--|
|                 | identifications") competition. Round 1 was held in December 2007   |
| Jun, 2008       | Session chair, Academy of Clinical Laboratory Physicians and   |
|                 | Scientists (ACLPS)   |
|                 | Philadelphia, PA   |
| Nov, 2008       | Session Chair, Invitrogen Current Topics Meeting   |
|                 | San Diego, CA  |
| Jul, 2009       | Organizing Committee Member, American Association for Clinical   |
|                 | Chemistry (AACC) Proteomics Division Meeting   |
| N. <b>2</b> 000 | Chicago, IL  |
| Nov, 2009       | Organizing committee, "Translating Novel Biomarkers to Clinical  |
|                 | Practice: Role and Opportunities for the Clinical Laboratory"  |
| Nov. 2000       | Bethesda, MD<br>Sessien as sheir "Translating Nevel Diamarkars to Clinical   |
| Nov, 2009       | Session co-chair, "Translating Novel Biomarkers to Clinical<br>Protice: Role and Ornertunities for the Clinical Laboratory." |
|                 | Practice: Role and Opportunities for the Clinical Laboratory"<br>Bethesda, MD  |
| Feb, 2011       | Session chair, "Mass Spectrometry Applications in the Clinical   |
| 100,2011        | Laboratory" (MSACL 2011)   |
|                 | San Diego, CA  |
| Jul, 2011       | Short Course Moderator, American Association of Clinical   |
| ,               | Chemistry  |
|                 | Atlanta, GA  |
| Jul, 2012       | Short Course Moderator, American Association for Clinical  |
|                 |  |

|           | Chemistry  |
|-----------|--|
|           | Los Angeles, CA  |
| Feb, 2013 | Scientific Advisory Committee, MSACL (Mass Spectrometry          |
|           | Applications in the Clinical Laboratory) 2013                    |
|           | San Diego, CA  |
| Feb, 2013 | Organizing Committee, AACC Molecular Biomarker Diagnostic        |
|           | Applications (MBDxA)   |
|           | San Diego, CA  |
| Feb, 2013 | Session Chair, "Disease Markers", MSACL 2013                     |
|           | San Diego, CA  |
| Apr, 2013 | Session Chair, "Biomarkers: Buyer Beware", Oak Ridge             |
|           | Conference, American Association for Clinical Chemistry.         |
|           | Baltimore, MD  |
| Apr, 2013 | Planning Group, Oak Ridge Conference, American Association for   |
|           | Clinical Chemistry   |
|           | Baltimore, MD  |
| Jul, 2013 | Session Organizer / Moderator, "Proteomic and Metabolomic        |
|           | Biomarkers for the Clinical Laboratory: Shared Goals, Common     |
|           | Strategies", American Association for Clinical Chemistry Annual  |
|           | Meeting  |
|           | Houston, TX  |
| Mar, 2014 | Scientific Advisory Committee, MSACL (Mass Spectrometry          |
|           | Applications in the Clinical Laboratory) 2014                    |
|           | San Diego, CA  |
| Mar, 2015 | Scientific Advisory Committee, MSACL (Mass Spectrometry          |
|           | Applications in the Clinical Laboratory)                         |
|           | San Diego, CA  |
| Jul, 2015 | Annual Meeting Organizing Committee Member, American             |
|           | Association for Clinical Chemistry Annual Meeting                |
|           | Atlanta, GA  |
| Sep, 2015 | Session Chair, "Proteomics Assay Development"                    |
| -         | MSACL EU, Salzburg, Austria                                      |
| 2015      | Annual Meeting Organizing Committee Member, American             |
|           | Association for Clinical Chemistry Annual Meeting                |
|           | Atlanta, GA  |
| Feb, 2016 | Scientific Advisory Committee, MSACL 2016                        |
|           | Palm Springs, CA   |
| Feb, 2016 | Session Chair, "Computational Aids to Assay Development in       |
|           | LC-MS/MS", MSACL 2016  |
|           | Palm Springs, CA   |
| Aug, 2016 | Session Moderator, "In the Era of Digital Medicine, Patients are |
|           | Connected and in Control - What Does this Mean for               |
|           | Laboratorians?", AACC 2016                                       |
|           | Philadelphia, PA   |
| Aug, 2016 | Q&A Moderator, Theranos Presentation, AACC 2016                  |
|           | Philadelphia, PA   |

| Jan, 2017 | Scientific Advisory Committee, MSACL 2017                  |
|-----------|--|
|           | Palm Springs, CA   |
| Jan, 2018 | Scientific Advisory Committee, MSACL 2018                  |
|           | Palm Springs, CA   |
| Dec, 2020 | Annual Meeting Organizing Committee Member (Vice-Chair),   |
|           | American Association for Clinical Chemistry Annual Meeting |
|           | Virtual due to COVID-19                                    |

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