

BIOGRAPHICAL SKETCH

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NAME Karen Jonscher, Ph.D.	POSITION TITLE Assistant Professor, Anesthesiology Proteomics Director, Center for Human Nutrition Mass Spectrometry Core Facility		
eRA COMMONS USER NAME JONSCHERK			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Colorado; Boulder, CO	B.S.	1989	Engineering Physics
California Institute of Technology; Pasadena, CA	M.S.	1991	Applied Physics
California Institute of Technology; Pasadena, CA	Ph.D.	1996	Applied Physics
National Jewish Medical and Research Center; Denver, CO	Post- Doctoral	1996-2000	Mass Spectrometry/ Proteomics/Immunology
University of Colorado; Boulder, CO	Post- Doctoral	2000-2005	Mass Spectrometry/ Proteomics

A. Positions and Honors **Positions and Employment**

- 1997-2000 Postdoctoral student, Department of Immunology, National Jewish Medical and Research Center; Denver, Colorado
- 2000-2005 Postdoctoral student and Research Associate, Department of Chemistry and Biochemistry, University of Colorado; Boulder, Colorado
- 2000-present Freelance technical writer, KJ Technical Communications; Centennial, Colorado
- 2005-2006 Sr. Professional Research Associate, Department of Anesthesiology, University of Colorado Denver, Colorado
- 2006-present Assistant Professor, Department of Anesthesiology, University of Colorado Denver, Colorado. CNRU Proteomics Core Facility Director.
- 2005-2006 Co-organizer and instructor, "Mass Spectrometry-based Proteomics Training Course"; Denver, Colorado
- 2005 Co-organizer, "Systems Biology in Biomedical Research" Symposium, Denver, CO
- 2006 Organizer, "High Technology Approaches to Gender-Specific Disease" Forum, Denver, CO
- 2006 Education Committee Member Association of Biomolecular Resource Facilities
- 2006 Education Committee Member, American Society for Mass Spectrometry
- 2007 Education Committee Chair, Association of Biomolecular Resource Facilities
- 2008 Chair, Women's Committee of the Faculty Council, University of Colorado

Honors:

- 1985 Dean's Scholarship, University of Colorado; Denver, Colorado
- 1986 Dean's Scholarship, University of Colorado; Denver, Colorado
- 1987-1989 Tau Beta Pi Member
- 1988 Stanley and Harriet Tippman Scholarship, University of Colorado; Boulder, Colorado
- 1989 Graduated with Special Honors
- 2007 Received ABRF 2007 Outstanding Scientists and Technologists Award
- 2007 Received the Society of Investigative Dermatology/Eugene M. Farber Travel Award for Young Investigators

B. Selected peer-reviewed publications:

1. W. Kutschera, I. Ahmad, P.J. Billquist, B.G. Glagola, K. Furer, R.C. Pardo, M. Paul, K.E. Rehm, P.J. Slota, Jr., R.E. Taylor, and J.L. Yntema, ***Studies Towards a Method for Radiocalcium Dating of Bones***, Radiocarbon **31** 311-323 (1989).
2. J.F. Scott, S.J. Shieh, K.R. Furer, N.A. Clark, and W.F. Oliver, ***Anisotropic Thermal Lens Effect in Ferroelectric Ba₂NaNb₅O₁₅ at T_c***, Phys. Rev. B **41** 9330-9335 (1990).

3. P.R. Griffin, K. Furer-Jonscher, L.E. Hood, J.R. Yates, III, J. Schwartz, and I. Jardine, ***Analysis of Proteins by Mass Spectrometry***, Techniques in Protein Chemistry III, Ed. R.A. Angletti, Academic Press, NY pp. 467-476 (1992).
4. K. Jonscher, G. Currie, A.L. McCormack, and J.R. Yates, III, ***The Analysis of Peptides and Proteins by Matrix-Assisted Laser Desorption Ionization Quadrupole Ion Trap Mass Spectrometry***, Rapid Commun. Mass Spectrom. **7** 20-26 (1993).
5. K.R. Jonscher and J.R. Yates, III, ***Mixture Analysis Using a Hybrid Quadrupole Mass Filter/Quadrupole Ion Trap Mass Spectrometer***, Anal. Chem. **68** 659-667 (1996).
6. K.R. Jonscher and J.R. Yates, III, ***The Whys and Wherefores of Quadrupole Ion Trap Mass Spectrometry***, ABRF News. **7** (3) 1-15 (1996).
7. K.R. Jonscher and J.R. Yates, III, ***The Quadrupole Ion Trap Mass Spectrometer - A Small Solution to a Big Challenge***, Anal. Biochem. **244** 1-15 (1997).
8. K.R. Jonscher and J.R. Yates, III, ***Matrix-Assisted Laser Desorption Ionization/Quadrupole Ion Trap Mass Spectrometry of Peptides: Application to the Localization of Phosphorylation Sites on the P Protein from Sendai Virus***, J. Biol. Chem. **272** 1735-1741 (1997).
9. T.S. Lewis, J. Hunt, L. D. Aveline, K.R. Jonscher, D.F. Louie, J. Yeh, K. A. Resing, and N.G. Ahn, ***Identification of Novel MAP Kinase Pathway Signaling Targets by Functional Proteomics and Mass Spectrometry***, Mol Cell. **6** 1343-54 (2000).
10. K.R. Bernard, K.R. Jonscher, K.A. Resing and N.G. Ahn, ***Methods in functional proteomics: two-dimensional polyacrylamide gel electrophoresis with immobilized pH gradients, in-gel digestion and identification of proteins by mass spectrometry***, Methods Mol Biol. **250** 263-82 (2004).
11. K.A. Resing, K. Meyer-Arendt, A.M. Mendoza, L.D. Aveline-Wolf, K.R. Jonscher, K.G. Pierce, W.M. Old, H.T. Cheung, S. Russell, J.L. Wattawa, G.R. Goehle, R.D. Knight, and N.G. Ahn, ***Improving reproducibility and sensitivity in identifying human proteins by shotgun proteomics***, Anal Chem. **76** 3556-3568 (2004).
12. K.R. Jonscher and G. Valaskovic, ***High sensitivity analysis of proteins and peptides***, Encyclopedia of Mass Spectrom. Vol 2, Eds. R.M. Caprioli and M.L. Gross, Elsevier Press, MO, pp. 54-65 (2004).
13. K.R. Jonscher, ***Decoding the chromosome core with top-down MS***, Anal. Chem. **78** 4244 (2006) (Review).
14. K.R. Jonscher, ***Not your run-of-the-mill test tube***, Anal. Chem. **78** 6709-6713 (2006) (Product Review).
15. C. Lambert, J. Li, K.R. Jonscher, M. Quintana and B. Freed, ***Acrolein, an aldehyde found in cigarette smoke, inhibits NF-kB activity and cytokine production***, Journal of Biological Chemistry **282** (27) 19666-19675 (2007).
16. M. Armstrong, K.R. Jonscher and N. Reisdorph, ***Analysis of 25 underivatized amino acids in human plasma using ion pairing reversed-phase liquid chromatography/time of flight mass spectrometry***, Rapid Communications in Mass Spectrometry **21** (16) 2717-2726 (2007).
17. S. Laudi, W. Steudel, K.R. Jonscher, W. Schoning, B. Schneidewind, U. Kaisers, U. Christians and S. Trump, ***Comparison of lung proteome profiles in two rodent models of pulmonary arterial hypertension***, Proteomics **7** 2469-2478 (2007).
18. K.R. Jonscher, ***To trap or to transmit, that is the question...***, Anal. Chem. **79** (9) 3235 (2007) (Review).
19. K.R. Jonscher, ***High power for mid-level proteomics***, Anal. Chem. **79** (11) 3959 (2007) (Review).
20. L.L. Klein, K.R. Jonscher (joint first authors), R.S. Gibbs, E.J. Kushner, N.A. Reisdorph and J.L. McManaman, ***Proteomic profiling of human vaginal fluid during pregnancy***, Reproductive Science, **15** 263-273 (2008).

C. Current and Pending Research Support:

Edwards, C (PI)

Pending

Sponsored Industry Grant

Rocky Mountain Biopharma, Inc. Research and Development Proposal

I serve as co-PI on this proposal that includes five separate research projects. I am responsible for oversight and methods development for sample preparation and mass spectrometric analysis of samples from one quality control and assessment project, two basic science investigations, and two small scale clinical trials.

- Fiegel, M. (PI) Pending
Anesthesiology Department Seed Grant
Investigation of the effect of nitric oxide on ischemia reperfusion injury during extended donor criteria liver transplantation
I serve as co-PI on this project investigating the effect of inhaled nitric oxide on ischemia reperfusion injury during liver transplantation and will use mass spectrometry to quantify changes in peroxiredoxin isoforms as a consequence of treatment.
- Lucia, S. (PI) Pending
NIH/NIDDK
Establishment of a tissue analysis and technology core
This funding is for establishing a facility to bank and analyze blood, urine and tissues submitted by various sites involved in the Multi-disciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network. I serve as co-PI and director of Proteomics.
- AI-063537 – Edwards, C. (PI) Pending
Rocky Mountain Regional Center of Excellence
Drug discovery and validation of novel human AAT therapeutics for cutaneous anthrax
My role in this project is to use mass spectrometry to characterize natural and recombinant alpha-1-antitrypsin variants. These molecules will be tested for protective efficacy against *B. anthracis* and the toxins it generates. I serve as a co-PI.
- 1R25 GM083333-01 – Flores, S. (PI) 03/01/08-02/29/12
MBRS-IMSD Program at the University of Colorado at Denver and Health Sciences Center
This funding is for the development of an academic and research enrichment program designed to retain underrepresented students in science programs, provide academic support to enable them to complete their baccalaureate studies, and assist them with the pursuit of a doctoral degree in biomedical research. I serve as co-PI of this grant and the program coordinator.
- 2007 CNRU Pilot Project Award – Jonscher, K. (PI) 8/1/07-7/31/-09
Center for Nutrition Research Unit, University of Colorado Denver
Impact of modulators of sirtuins on liver metabolism in obesity
This funding is for the development of a targeted and quantitative proteomics method for identification of proteins with changes in levels of lysine acetylation under high fat vs. low fat feeding conditions.
- 0722791 NSF-MRI Award – Stith, B. (PI) 8/1/2007-8/31/2010
National Science Foundation
MRI: Acquisition of a Nanoflow Hybrid Triple Quadrupole/Linear Trap Mass Spectrometer System for Three Diverse Institutions
This funding allowed the purchase of a 4000 QTRAP mass spectrometer for use by students and researchers at UCDHSC Downtown and Anschutz campuses and Metro State College. I serve as co-PI of the grant and will oversee the instrument and provide training.
- 2007 National Psoriasis Foundation Award – Edwards, C. (PI) 3/1/2007 – 2/28/2008
National Psoriasis Foundation
Identifying T cell cytokine-inducing surface molecules (TCISMs) implicated in the pathogenesis of psoriasis using a proteomics approach
This project will use proteomics to identify surface proteins in an H9 cell line that may be responsible for cytokine upregulation in chronic plaque psoriasis.

2007 NAAF Award – Edwards, C. (PI)

1/1/2007 – 12/31/2008

National Alopecia Areata Foundation

Use of Precision Quantitative “Real Time” PCR to Assess Proinflammatory Gene Expression in Alopecia Areata Patients in Correlation with a Mouse Model of Disease

This funding is to use proteomics and precision quantitative “Real Time” PCR to look for biomarkers of alopecia areata in blood and skin biopsies of affected patients.

T15 HL086386-01 – Reisdorph, N. (PI)

9/1/2006-8/31/2010

NIH/NHLBI

Proteomics & Genomics Hands-On Workshop: From Sample Preparation to Data Analysis

This funding is for development of a two week long hands-on workshop curriculum to teach proteomics and genomics.

5 P30 DK048520-09- Hill, J.O. (PI)

8/1/2005 – 8/1/2010

NIH/NIDDK

Colorado Clinical Nutrition Research Unit/ Mass Spectrometry Core

I function as the Manager of the Proteomics Division of the CRNU’s mass spectrometry core facility that provides analytical services to CRNU investigators and researchers throughout the University of Colorado Denver.