



Preface

Special issue honoring Catherine Fenselau

Catherine Fenselau was one of the first trained mass spectrometrists to join the faculty of an American medical school (Johns Hopkins). At Johns Hopkins (Fig. 1), she was given the job description to “exploit mass spectrometry in biomedical research.” In early work, she pioneered MS investigations of intact microorganisms, novel synthesis, analysis and reactivities of drugs conjugated with glucuronic acid and glutathione, and benchmark analyses of zinc fingers and metallothioneins. Her group (Fig. 2) reported early determinations of gas phase peptide basicities including the first measurement of arginine’s proton affinity, target capture in ion molecule reactions, and the stability of α -helices and β -sheets in the gas phase. Her group introduced enzyme-catalyzed ^{18}O -labeling, Asp-selective acid cleavage and the use of nanoparticle pellicles in proteomic workflows, and has exploited proteomic strategies to investigate the mechanisms of tumor resistance to both chemotherapy and to immunotherapy.

Among many awards for her scholarship and scientific leadership, Dr. Fenselau has received the Thomson Medal from

the International Foundation for Mass Spectrometry, the Field and Franklin Award in Mass Spectrometry from the American Chemical Society, and the Adams Award from the Pittsburg Conference for Contributions to Bioanalytical Chemistry. She is associate editor of *Analytical Chemistry* and was the founding editor of *Biomedical Mass Spectrometry* (now *Journal of Mass Spectrometry*). She is a past president of ASMS, founding president of US HUPO, and was senior vice president of international HUPO.

She has published more than 350 peer reviewed research papers (Supplemental Table 1), and approximately one hundred and forty undergraduates, graduate students (Table 1) and post-doctoral fellows (Table 2) have received training in Dr. Fenselau’s laboratories.

Fenselau grew up in Nebraska, received her A.B. from Bryn Mawr College and earned a Ph.D. from Stanford University. Presently she is Professor of Chemistry & Biochemistry at the University of Maryland (Fig. 3) and a member of the Greenebaum Cancer Center at the University of Maryland School of Medicine.

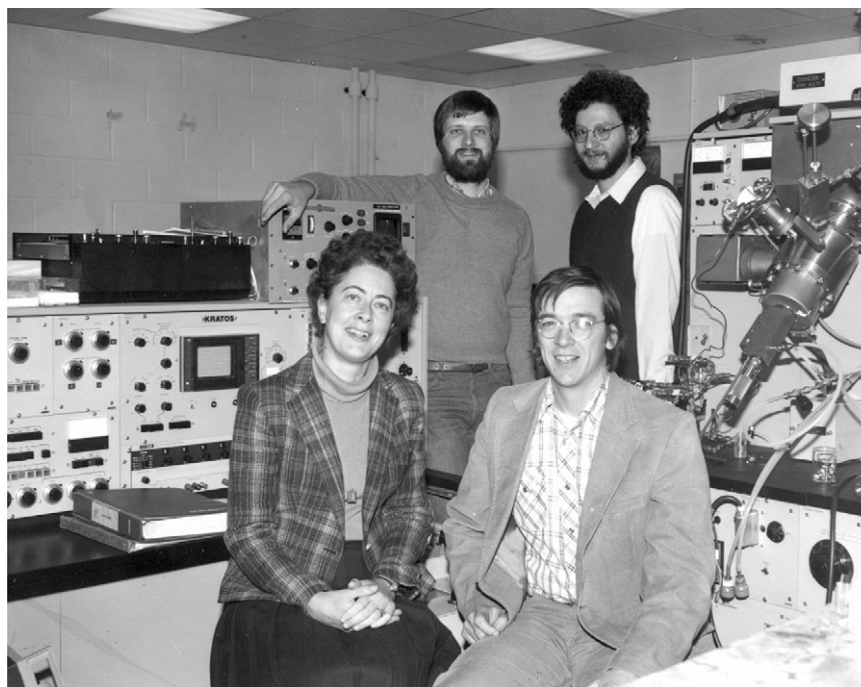


Fig. 1. Dr. Catherine Fenselau at Johns Hopkins University ca. 1983 with members of the Middle Atlantic Mass Spectrometry Facility including Robert Cotter (front), James Yergey (standing left), and David Heller (standing right).

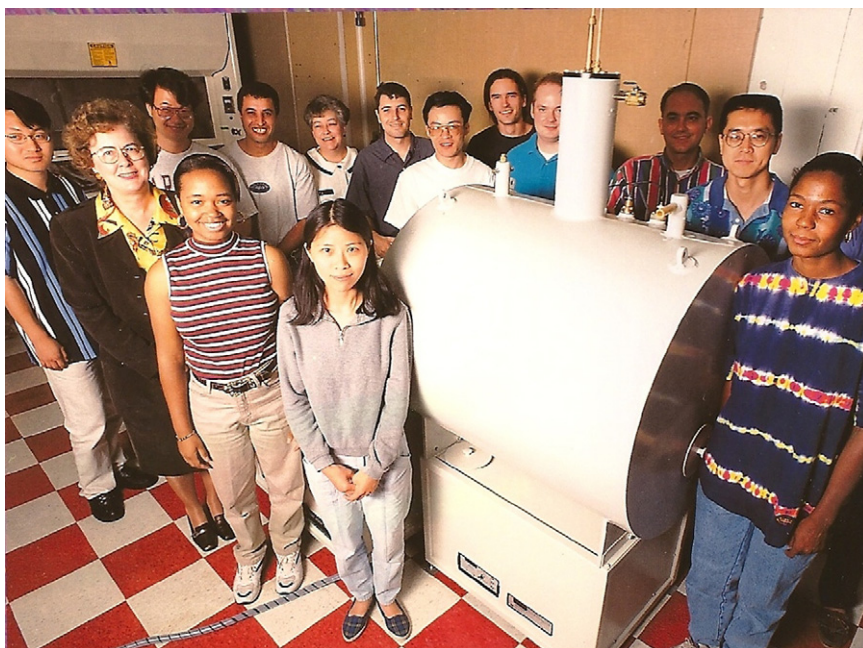


Fig. 2. The research group of Dr. Fenselau at the University of Maryland Baltimore County.

Table 1

Pre-doctoral trainees in the research group of Dr. Catherine Fenselau at the Johns Hopkins University and the University of Maryland (1981–present).^a

Name	Dates	Next position
Yelle, Lauren	1981–1982	Arthur D. Little, Inc.
van Breemen, Richard	1981–1985	Assoc. Prof., University of Illinois, Chicago
Lisek, Carol	1981–1985	Monsanto, Corporation
Bradow, Gretchen	1983–1987	Scientific Redactor
Yuan, Zhi-min	1989–1991	University of Maryland School of Pharmacy
Yu, Xiaolan	1990–1994	Chiron Corporation
Wu, Zhuchun	1990–1994	Human Genome Sciences, Inc.
Kelly, Michele	1990–1994	Pfizer Pharmaceuticals
Murphy, Connie	1990–1994	U. S. Food and Drug Administration
Kaltashov, Igor	1991–1995	Assist. Prof. Univ. Massachusetts, Amherst
Jiang, Licong	1992–1994	Toxicology Incorporated
Antoine, Miquel	1993–1997	Johns Hopkins Applied Physics Laboratory
He, Tao	1993–1997	Celera
Thomas, John	1996–1999	Genetics Institute
Wei, Dong	1996–1998	Arqule, Incorporated
Han, Mark	1996–1997	Celera
Li, Aiqun	1996–1998	Celera
Bundy, Jonathan	1997–2000	Research Triangle Institute
Sapp, Lisa	1997–2000	Micromass Inc.
Shefcheck, Kevin	1998–2002	U. S. Food and Drug Administration
Reynolds, Kristy	1999–2003	Children's Hospital, Washington D.C.
Williams, Bruce	1999–2001	Assist. Prof., West Point
Rahbar, Amir	2001–2004	Navel Research Laboratory
Fu, Zhongming	2001–2004	Johns Hopkins University Medical School
Strong, Rachael	2002–2005	National Institutes of Health
Hays, Faith	2002–2006	Shimadzu Scientific Instruments
An, Yanming	2002–2005	U. S. Food and Drug Administration
Wang, Sunny	2004–2007	University of California, Berkeley
Ofurum, Ulunna	2003–2004	Industry
Swatoski, Stephen	2004–2007	Johns Hopkins School of Medicine
Wynne, Colin	2007–2010	Thomas Jefferson University
Li, Jinxi	2007–2010	National Institutes of Health
Lohnes, Karen	2006–cur	
Cannon, Joe	2007–cur	
Choksawangkarn, Waeowalee	2008–cur	
Dhabaria, Avantika	2010–cur	
Burke, Meghan	2010–cur	
Rose, Rebecca	2011–cur	

^a This list of predoctoral graduate students does not include >40 undergraduate students or those students who worked briefly in Dr. Fenselau's research group before moving to another laboratory to complete their graduate studies.

Table 2Post-doctoral trainees in the laboratory of Dr. Catherine Fenselau (1970–present).^a

Name	Dates	Next position
Duncan, James	1970–1972	Assist. Prof., University of Florida
Einolf, Noel	1972–1973	Philip Morris Research Laboratory
Billets, Steve	1972–1974	Environmental Protection Agency
Salmon, Manuel	1973–1974	Assist. Prof, Nat. University of Mexico
Thomson, Mike	1973–1974	Bausch and Lomb Research Laboratory
Jardine, Ian	1974–1976	Assist. Prof, Purdue University
Johnson, Les	1975–1977	Assist. Prof., University of Adelaide
Lyle, Michael	1976–1977	Dental School
SubbaRao, S.	1976–1977	Department Chairman, Lincoln University
Campana, Joe	1979–1980	U.S. Naval Research Laboratory
Richter, Berndt	1979–1980	Bayer Research Laboratory, Germany
Feng, Paul	1979–1981	Monsanto Agricultural Products
Vu, Van	1979–1981	Georgetown University
Yost, Gary	1979–1981	Assist. Prof., Washington State University
Chen, Tom	1980–1981	Merck, New Jersey
Yergey, James	1981–1983	Merck, Canada
Liberato, Dan	1981–1983	Hoffman-LaRoche
Stogniew, Martin	1981–1983	Adria Laboratories
Lehman, James	1982–1984	Arizona State University
Reed, Lynn	1982–1983	Consultant
Larsen, Barbara	1982–1984	E.I. DuPont Nemours
Robbins, Ronald	1984–1985	Aberdeen Proving Grounds
Hyver, Karen	1983–1985	Hewlett-Packard
El Mouehli, Mohammed	1985–1986	Assist. Prof., University of Cairo, Egypt
Dulik, Deanne	1984–1987	Smith, Kline and French
Demirev, Plamen	1985–1987	Bulgarian Academy Science
Bean, Mark	1986–1988	Smith, Kline and French
Ohashi, Yoko	1986	Riken, Tokyo
Connors, Suzanne	1986–1987	University of Arizona
Simpson, Richard	1987–1989	Smith, Kline and French
Shimada, Noriaki	1988–1989	Daiichi Fine Chemicals
Da Silva, Vera	1988	Instructor, Univ. of Maryland Baltimore County
Smith, Philip	1987–1990	GeoSystems
Bordas-Nagy, Joeseeph	1991	SmithKline Beecham
Orlando, Ronald	1987–1990	Assist. Prof., University of Georgia
Sumpter, Terry	1990–1991	SAIS
Hua, Suiming	1989–1991	University of Maryland Medical School
Bryant, Duncan	1989–1990	SmithKline Beecham
Vestling, Martha	1988–1992	Staff Scientist, University of Wisconsin
Cheng, Xueheng	1991–1992	Abbott Laboratories
Fabris, Daniele	1992–1998	Assist. Prof., Univ. of Maryland Baltimore County
Shore, Leonard	1992–1994	Beatson Institute Cancer Research, Glasgow, UK
Zaia, Joseph	1994–1996	Assist. Prof., Boston University
Hathout, Yetrib	1996–2003	Assist. Prof. George Washington Medical School
Ho, Yen-Peng	1997–1999	Assist. Prof. Nat. Dong Hwa University
Alvarez, Erwin	1997–1998	ChemRX San Diego
Williams, Tracie	1998–1999	Assist. Prof., University of the South, Tennessee
Ryzhov, Victor	1998–2000	Assist. Prof., University of Northern Illinois
Demirev, Plamen	1998–2001	Johns Hopkins Applied Physics Laboratory
Szilagyi, Zoltan	1998–1999	Enology Res. Inst. Hungary
Yao, Xudong	1999–2002	Assist. Prof., University of Connecticut
Kim, Yeoun Jin	1999–2000	Samsung Corporation
Afonso, Carlos	2000–2002	Assist. Prof., University of Paris VI
Yao, Zhongping	2000–2002	Cambridge University, UK
Eliasi-Amiri, Bijan	2000–2001	E.I. DuPont de Nemours
Ramirez, Javier	2000–2001	Bruker Daltonics
Warscheid, Bettina	2002–2003	Assist. Prof., University of Ruhr
Gehrmann, Marion	2002–2003	Consultant
Whiteaker, Jeff	2002–2003	Fred Hutchinson Research Center, Seattle
Pribil, Patrick	2003–2004	Sciex Inc. Toronto
Russell, Scott	2004–2006	Assist. Prof., California State University Stanislaus
Havey, Crystal	2006–2007	Consultant
Laine, Olli	2006–2007	Institute of Occupational Health, Finland

^a In addition to these postdoctoral trainees, the following staff scientists worked in the Fenselau laboratory: Freas, Amy Hansen, Gordon Heller, David Kan, Ma-Na Nancy Pallante Morell, Sharon.



Fig. 3. The Fenselau research group at the University of Maryland, College Park in 2011.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.ijms.2012.01.014](https://doi.org/10.1016/j.ijms.2012.01.014).

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