KIMBERLY HAMAD-SCHIFFERLI
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Professional Preparation:

Massachusetts Institute of Technology, Cambridge, MA	Chemistry	S.B. 1994
University of California at Berkeley, Berkeley, CA	Chemistry	Ph.D 2000

Appointments:

Visiting Scientist	Natick Soldier Systems Center	9/2023-present
Professor	University of Massachusetts Boston	9/2023-present
Associate Professor	University of Massachusetts Boston	9/2015-8/2023
Technical Staff	MIT Lincoln Laboratory	6/2012-7/2015
Associate Professor	MIT	2010-2012
Assistant Professor	MIT	2002-2010
Postdoctoral Associate	MIT	2000-2002

Selected Recent Publications (h-index=41):

1) C. Rodriguez-Quijada, C. Lyons, M. Sánchez-Purrà, C. Santamaria, B. M. Leonardo, S. Quinn, M. Tlusty*, M. Shiaris*, **K. Hamad-Schifferli***, "A gold nanoparticle paper immunoassay for sensing the presence of *Vibrio parahaemolyticus* in oyster hemolymph," 2023, *ACS Omega, in press*.

2) H. Rijal, L. Goggin, R. Muriph, J. Evans*, **K. Hamad-Schifferli***, "The influence of preforming protein coronas on the performance of dengue NS1 immunoassays," 2022, *Pharmaceutics*, **14** (11) 2439.

3) D. R. Hristov, H. Rijal, J. Gomez-Marquez, **K. Hamad-Schifferli***, "Developing a paper-based antigen assay to differentiate between coronaviruses and SARS-CoV-2 Spike variants," 2021, *Analytical Chemistry,* **93** (22) 7825-7832*.*

4) D. R. Hristov, A. J. Pimentel, G. Ujialele, **K. Hamad-Schifferli***, "The immunoprobe aggregation state is central to dipstick immunoassay performance," 2020, *ACS Applied Materials and Interfaces,* **12** (31) 34620-34629.

5) C. Rodriguez-Quijada, J. Gomez-Marquez, **K. Hamad-Schifferli***, "Repurposing old antibodies for new diseases by exploiting cross reactivity and multicolored nanoparticles" *ACS Nano,* 2020, **14**, 6, 6626–6635.

6) C. Rodriguez-Quijada, C. Lyons, C. Santamaria, S. Quinn, M. Tlusty, M. Shiaris, **K. Hamad-Schifferli***, "Optimization of paper-based nanoparticle immunoassays for direct detection of the bacterial pathogen *V. parahaemolyticus* in oyster hemolymph." *Analytical Methods*, in themed issue "Bioanalytical sensors for real world applications," 2020, **12** (23) 3056-3063.

7) L. Russo, M. Sánchez-Purrà, C. Rodriguez-Quijada, B. M. Leonardo, V. Puntes*, and **K. Hamad-Schifferli***, "Detection of myxovirus resistance protein A (MxA) in paper-based immunoassays with surface enhanced Raman spectroscopy with AuAg nanoshells," *Nanoscale,* 2019, **11** (22)*,* 10819-10827.

8) S. Wick, D. I Walsh III, J. Bobrow, **K. Hamad-Schifferli**, D. S. Kong, T. Thorsen, K. Mroszczyk, P.A. Carr,* "PERSIA for Direct Measurement of Transcription, Translation, and Enzyme Activity in Cell-Free Systems," *ACS Synthetic Biology,* 2019, **8** (15) 1010-1025.

9) C. Rodriguez-Quijada, H. de Puig, M. Sánchez-Purrà, C. Yelleswarapu, J. J. Evans, J. P. Celli, **K. Hamad-Schifferli***, "Protease degradation of protein coronas and its impact on cancer cells and drug payload release," *ACS Applied Materials and Interfaces,* 2019, **11** (16), 14588–14596.

10) M. Sánchez-Purrà, B. Roig-Solvas, C. Rodriguez-Quijada, B. M. Leonardo, **K. Hamad-Schifferli***, "Reporter Selection for Nanotags in Multiplexed Surface Enhanced Raman Spectroscopy Assays," *ACS Omega*, 2018, **3** (9) 10733–10742, *invited article*.

11) E. Phillips, A. K. Young, N. Albarran, J. Butler, K. Lujan, **K. Hamad-Schifferli**, J. Gomez-Marquez, "Ampli: A Construction Set for Paperfluidic Systems," *Advanced Healthcare Materials*, 2018, 1800104.

12) M. Sánchez-Purrà, B. Roig-Solvas, A. Versiani, C. Rodríguez-Quijada, H. de Puig, I. Bosch, L. Gehrke, **K. Hamad-Schifferli***, "Design of SERS nanotags for multiplexed lateral flow immunoassays," for the special collection "Engineering Nanoparticles for Sensing and Biomedical Applications," *Molecular Systems Design & Engineering*, 2017, **2**, 401-409, invited paper.

13) I. Bosch, et al., "Rapid antigen tests for dengue virus serotypes and Zika virus in patient serum," 2017, *Science Translational Medicine,* **9,** eaan1589.

14) M. Sánchez-Purrà, M. Carré-Camps, H. de Puig, L. Gehrke, **K. Hamad-Schifferli***, "SERS-based sandwich immunoassays for multiplexed detection of zika and dengue viral biomarkers," 2017, *ACS Infectious Diseases*, **3** (10) 767–776.

Synergistic Activities:

1. Broadening participation in STEM: co-PI on Sloan Pathways grant, "Culture Change in Computer Science and Engineering at the University of Massachusetts Public University System: A Partnership Between UMass Boston and Amherst" UMass Amherst and UMass Boston; co-PI on NASA INCLUDES grant "Partners Aligned To Heighten broad participation in STEM (PATHS)," 2021-2024; workshops to address women faculty in STEM and having children while on tenure track (MIT, 2009-2012), advising for the McNair Program at UMass Boston, which increases STEM participation of underrepresented minorities and students with underprivileged socioeconomic status. Research mentoring: 5 female graduate students advised for PhD, 1 female student for MS, 4 female undergraduates mentored for BS; 45 undergraduate students mentored for research (22 female and 13 underrepresented minorities).
2. New curriculum development for a) Depts. of Mechanical Engineering & Biological Engineering at MIT, also tied to new undergraduate major in Biological Engineering and also a focused track for mechanical engineers in biological engineering and/or nanotechnology, b) development of a Mechanical Engineering undergraduate program at UMass Boston, c) revamping Electrical and Computer Engineering courses at UMass Boston to incorporate project based learning.
3. International collaborations: a) MIT-Univ. Brescia (Italy) Faculty Exchange Program, funded by Fondazione Cariplo, June 2010-Sept. 2012, resulted in publication of 3 papers, joint editorship of "Nanomaterial interfaces in Biology," *Methods in Molecular Biology*, 2013; b) student exchange between MIT, UMass Boston with Institut Químic de Sarrià, Spain, 2004-2019.
4. Awards and honors include: 2017 Foresight Fellow, The Foresight Institute; 2004 Office of Naval Research Young Investigator (ONR YIP); Ruth and Joel Spira Award for Distinguished Teaching in the School of Engineering, MIT, 2005.
5. Organized conferences in the scientific community (selected conferences: 37th Symposium om Microscale Separation and Bioanalysis, 2021; Symposia at the American Chemical Society National Meetings 2010 and 2015, European Materials Research Society, 2011). Served on American Chemical Society Physical Chemistry Executive Committee, 2012-2015.