



Highlighted in Synfacts: <<https://doi.org/10.1055/s-0037-1612570>>

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\*Equal contribution  
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6. Möckl, L.\*, **Pedram, K.\***, Roy, A. R., Krishnan, V., Gustavsson, A.-K., Dorigo, O., Bertozzi, C. R., and Moerner, W. E. Quantitative super-resolution microscopy of the mammalian glycocalyx. *Developmental Cell* 50, 57-72 (2019).  
\*Equal contribution  
**Featured on the journal cover**  
Author manuscript available on chemRxiv: <<https://doi.org/10.26434/chemrxiv.7381724.v1>>
5. Malaker, S. A.\*, **Pedram, K.\***, Ferracane, M. J., Bensing, B. A., Krishnan, V., Pett, C., Yu, J., Woods, E. C., Kramer, J. R., Westerlind, U., Dorigo, O. & Bertozzi, C. R. The mucin-selective protease StcE enables molecular and functional analysis of human cancer-associated mucins. *Proc. Natl. Acad. Sci. U.S.A.* 116, 7278–7287 (2019).  
\*Equal contribution  
Author manuscript available on chemRxiv: <<https://doi.org/10.26434/chemrxiv.7330676.v1>>  
**Stanford News Article**: <<https://chemh.stanford.edu/news/stanford-chemists-develop-tool-study-rigid-structures-cancer-cells>>
4. Woods, E. C., Kai, F., Barnes, J. M., **Pedram, K.**, Pickup, M. W., Hollander, M. J., Weaver, V. M. & Bertozzi, C. R. A bulky glycocalyx fosters metastasis formation by promoting G1 cell cycle progression. *eLife Sciences* 6, e25752 (2017).
3. Udeshi, N. D., **Pedram, K.**, Svinkina, T., Fereshetian, S., Myers, S. A., Aygun, O., Krug, K., Clauser, K., Ryan, D., Ast, T., Mootha, V. K., Ting, A. Y. & Carr, S. A. Antibodies to biotin enable large-scale detection of biotinylation sites on proteins. *Nature Methods* 14, 1167-1170 (2017).
2. Hung, V., Udeshi, N. D., Lam, S. S., Loh, K. H., Cox, K. J., **Pedram, K.**, Carr, S. A., & Ting, A. Y. Spatially resolved proteomic mapping in living cells with the engineered peroxidase APEX2. *Nature Protocols* 11, 456-475 (2016).
1. Hauptman, J. S., **Pedram, K.**, Sison, C. A., Sankar, R., Salamon, N., Vinters, H. V. & Mathern, G. W. Pediatric Epilepsy Surgery: Long-term 5-Year Seizure Remission and Medication use. *Neurosurgery* 71, 985–993 (2012).

## Patents

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1. Bertozzi, C. R., Banik, S. M., **Pedram, K.** Bifunctional Molecules for Lysosomal Targeting and Related Compositions and Methods. *U.S. Application Serial No. 62/782,193*.
2. Bertozzi, C. R., Malaker S. A., **Pedram K.** Methods Employing Mucin-Specific Proteases. *U.S. Application Serial No. 62/757,585*.

## Awards

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### Graduate

- 2015 – 2020      **National Science Foundation Graduate Research Fellowship**
- 2015 – 2020      **Victor and Susan Althouse Graduate Research Fellow, Stanford University**  
Stanford Graduate Research Fellowships are awarded to approx. 100 applicants across all Stanford science and engineering graduate programs. Provides full tuition and stipend for 3 years.
- 2015 – 2020      **Stanford ChEM-H Predoctoral Fellow**  
Provides funding for up to 2 years and cross training in concepts and techniques from chemistry and biology.

### Undergraduate

- 2015      **Phi Beta Kappa**
- 2015      MIT Department of Chemistry Merck Index Award
- 2015      MIT Department of Chemistry Service Award
- 2014      Burchard Scholar  
A nomination-based MIT seminar program featuring a series of special lectures and group discussions on topics in the Humanities, Arts, and Social Sciences.
- 2013      **Simons Center for the Social Brain Undergraduate Research Fellowship**  
Funding to support work on mapping the proteome of the Axon Initial Segment.
- 2010      UC Berkeley Edward Frank Kraft Freshman Award
- 2010      Essay of the Semester Award  
For an essay on Socrates, chosen among submissions from approx. 100 students in UC Berkeley's Western Civilization course (L&S R044).
- 2010      **U.S. Department of Education Robert C. Byrd Honors Scholarship**

## Teaching and Mentorship

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- Fall '18      Teacher for Stanford Splash  
Designed and taught a one-time class, *Introduction to Glycans*, to an audience of 10<sup>th</sup>-12<sup>th</sup>-graders.
- Spring '18      Teaching Assistant, Stanford Chemistry Department  
CHEM227 - Therapeutic Science at the Chemistry - Biology Interface  
Included a guest lecture on antibody-based medicines.
- Summer '17      Graduate lecturer, Mechanobiology Methods Bootcamp (ME342A/BioPhys342A)

Designed and taught an afternoon lecture and laboratory class on chemical methods to investigate glycocalyx structure and dynamics.

2016 – 2019     **Mentor for 5 rotation students and 1 undergraduate student in Bertozzi lab**  
Graduate students: Giovanni Forcina (Biology), Caitlyn Miller (Chemical Engineering), Judy Shon (Chemistry), Chih-Hao Lu (Chemistry), and Gabby Tender (Chemistry).  
Undergraduate student: Davey Huang (undeclared).

Fall '13, '14     Tutor, MIT Chemistry Department  
5.07 – Biological Chemistry I

## Service

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April '19             Volunteer Judge at the Stanford Undergraduate Research Conference

May '16 – March '18     Volunteer Teacher at 10 Books a Home  
In-home tutoring of two preschool age children from a local high poverty community, to better prepare them for kindergarten. The volunteering division of the company was dissolved in Spring 2018.  
<<http://www.10booksahome.org/>> Contact: Paul Thiebaut, CEO & Founder, paul@10booksahome.org, (650)-485-4877.

May '13 – Dec. '14     **Co-President, MIT Undergraduate Chemistry Association (ClubChem)**  
Faculty Advisor: Prof. Brad Pentelute, contact: (617) 324-0180.  
<<http://mit.edu/clubchem/www/about.html>>  
Bringing MIT chemistry majors, MIT faculty, and K-12 students in the community together through chemistry.  
**MIT News video interview:** <<https://www.youtube.com/watch?v=tCmNu9vNcyl>>

Feb. '13 – April. '13     Community Outreach Coordinator, Clubchem  
See above.

Sept. '12 – March '15     Volunteer at Massachusetts General Hospital  
Saturday evenings in the Department of Pediatric Emergency Medicine.  
Contact: Dr. Sonia Lewin, Attending Physician at the Department of Pediatric Emergency Medicine and Professor at the Harvard Medical School, (617) 724-3290.

Oct. '11 – May '12     Volunteer at UCSF Parnassus Medical Center  
Sunday mornings in the Playroom of the Child Life Services Dept., Benioff Children's Hospital. Contact: UCSF Volunteer Services, (415) 502-9888.

Sept. '11 – May '12     Volunteer Editorial Staff, Berkeley Scientific Journal  
Responsible for having paper submissions reviewed by professors and helping authors make the proper edits before publication.

## Professional Affiliations

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American Chemical Society  
Society for Glycobiology  
American Association for Cancer Research  
Association for Women in Science

## Communications

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- 2019 "Mucin-selective proteases as research tools and therapeutics"  
(Invited Talk, *Mucins in Health and Disease*, Cambridge, UK).  
**Pedram, K.**, Bertozzi, C.R.
- 2019 "Quantitative super-resolution microscopy of the mammalian glycocalyx reveals a nanoscale organization that is actively remodeled during cancer progression"  
(Talk, *Bioorganic Chemistry Gordon Research Seminar (GRS)*, and  
Poster, *Bioorganic Chemistry Gordon Research Conference (GRC)*, Andover, NH)  
**Pedram, K.** Möckl, L. Roy, Krishnan, V., Gustavsson, A.-K., Dorigo, O., Moerner W. E., Bertozzi, C.R.
- 2019 "Therapeutic targeting of soluble CA-125 in ovarian cancer"  
(Talk, *Dept. of Obstetrics and Gynecology Research Retreat*, Stanford, CA)  
**Pedram, K.**, Krishnan, V., Dorigo, O., and Bertozzi, C.R.
- 2019 "Precision glycocalyx editing with a mucin-degrading metalloprotease"  
(Talk, *San Diego Glycobiology Symposium, NextGen session*, San Diego, CA)  
**Pedram, K.**, Malaker, S. A., Bensing, B. A., Bertozzi, C. R.
- 2018 "A mucin-specific protease improves molecular analysis of cancer-derived mucins"  
(Poster, *Sialoglyco*, Banff, Alberta, Canada)  
**Pedram, K.**, Malaker, S. A., Bertozzi, C. R.
- 2016 "An enzymatic approach for degradation of pro-oncogenic cell surface mucins"  
(Poster, *Johnson Symposium in Organic Chemistry*, Stanford, CA)  
**Pedram, K.**, Woods, E.C. & Bertozzi, C.R.
- 2013 "Mapping the Proteome of the Axon Initial Segment Using a Spatially Restricted Enzymatic Labeling Approach"  
(Poster, *Simons Center for the Social Brain Poster Session*, Cambridge, MA)  
**Pedram, K.**, Loh, K., Cox, K. & Ting., A.
- 2009 "Molecular Mechanisms Underlying Infantile Epilepsy"  
(Poster, *ABRCMS*, Phoenix, Arizona)  
Sison, C. A. M., Chang, J.W., **Pedram, K.**, Chander, P., Nguyen, S. T., Huynh, M. N., Hemb, M., Velasco, T. & Mathern, G. W.