

--- Curriculum Vitae ---

1. Name Sarah J. Moore

2. Office address

Picker Engineering Program
100 Green St
Smith College
Northampton, MA 01063

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3. Education

Ph.D. 2012 Bioengineering
Stanford University
Thesis: Engineering Cystine-Knot Peptides for Molecular Imaging of Cancer

M.S. 2008 Bioengineering
Stanford University

B.S.E. 2006 Chemical Engineering, *magna cum laude*
Princeton University
Thesis: Engineering a Cyclic Peptide Inhibitor of Tuberculosis Intein Splicing
Certificate in Engineering Biology

4. Awards and Honors

2015 Smith College Faculty Teaching Award, awarded annually by the students of Smith College through the Student Government Association

2013 Sigma Xi Scientific Research Society, Full Member

2011-2012 Stanford Gerald Lieberman Fellowship

2011 Best Oral Presentation Award, Stanford Department of Bioengineering Annual Retreat

2010 Best Graduate Student Poster Award, Annual Symposium of the Protein Society

2010 Protein Society Finn Wold Travel Grant

2011, 2010 Stanford Bio-X Graduate Student Travel Award

2010-2011 Siebel Scholars Fellowship

2009 Stanford University Centennial Teaching Assistant Award

2008-2011 Stanford Graduate Fellowship – Medtronic Fellow

2006-2009 NSF Graduate Research Fellowship

2006 Tau Beta Pi Prize – Awarded by Princeton School of Engineering and Applied Science to a graduating senior for significant service to the engineering school

2006 Phi Beta Kappa Academic Honor Society

2006 Sigma Xi Scientific Research Society, Associate Member

2005 Tau Beta Pi Engineering Honor Society

5. Employment History

07/12 - present

Smith College, Northampton, MA

Assistant Professor, Picker Engineering Program

Courtesy Faculty, Department of Biology

6. Grants Received

Engineering therapeutic and diagnostic proteins for tumor biomarker mesothelin

2015 – 2018

National Institutes of Health, National Cancer Institute

Total Amount: \$399,232 (Role: P.I.)

Liberal Arts Modules to Promote Diversity and Achievement in STEM

2014 – 2017

Association of American Colleges and Universities, Project Kaleidoscope

Total Amount: \$287,426 (Role: Co-P.I. with Dr. Dominique Theibaut, Dr. Eitan Medelowitz, and Dr. Joseph O'Rourke)

7. Publications

* indicates undergraduate co-author

Peer-reviewed articles

S.J. Moore, M.G. Hayden Gephart, J.M. Bergen, Y.S. Su, H. Rayburn, M.P. Scott, J.R. Cochran. "Engineered knottin peptide enables non-invasive optical imaging of intracranial medulloblastoma." *Proc. Natl. Acad. Sci. USA*, 2013. 110(36): 14598-14603.

S.J. Moore, C.L. Leung, H.K. Norton*, and J.R. Cochran. "Engineering Agatoxin, a cystine-knot peptide from spider venom, as a molecular probe for in vivo tumor imaging." *PLOS ONE*, 2013. 8: e60498.

H. Jiang, S.J. Moore, S. Liu, H. Liu, Z. Miao, F.V. Cochran, Y. Liu, M. Tian, J.R. Cochran, H. Zhang, and Z. Cheng. "A novel radiofluorinated agouti-related protein for tumor angiogenesis imaging." *Amino Acids*, 2013. DOI: 10.1007/s00726-012-1391-y.

S.J. Moore and J.R. Cochran. "Engineering Knottins as Novel Binding Agents." *Methods in Enzymology*, 2012. 503: 223-251.

S.J. Moore, C.L. Leung, and J.R. Cochran. "Knottins: Disulfide-bonded Therapeutic and Diagnostic Peptides." *Drug Discovery Today: Technologies*, 2012. 9: e3-e11.

Book chapters

S.J. Moore, M.J. Olsen, J.R. Cochran, and F.V. Cochran. (2009) "Cell Surface Display Systems for Protein Engineering" in *Protein Engineering and Design*, Sheldon J. Park and Jennifer R. Cochran, eds., Taylor and Francis, Boca Raton. Release date: September 25, 2009.

8. Concerts, Performances, and Exhibitions

None

9. Scholarly Lectures and other Professional Presentations

Conference Oral Presentations

S.J. Moore, M.G. Hayden Gephart, J.M. Bergen, Y.S. Su, H. Rayburn, M.P. Scott, J.R. Cochran. "Engineered knottin peptide enables non-invasive optical imaging of intracranial medulloblastoma." American Institute of Chemical Engineers Annual Meeting, 2013.

S.J. Moore, C.L. Leung, H. Norton*, N. Papo, J.R. Cochran. "Engineered Monospecific and Bispecific Proteins That Target Tumor Vascular Receptors As In Vivo Imaging Agents." American Institute of Chemical Engineers Annual Meeting, 2011.

S.J. Moore, C.L. Leung, H. Norton*, J.R. Cochran. "Engineering Knottin Peptides for Tumor Imaging Applications." Stanford Department of Bioengineering Annual Retreat, 2011. (*Best Oral Presentation Award.*)

S.J. Moore and J.R. Cochran. "Creating Molecular Recognition from Scratch: Stepwise Engineering of Knottin Peptides to Bind Tumor Marker CA IX." American Chemical Society National Meeting, 2011.

S.J. Moore and J.R. Cochran. "Creating Molecular Recognition from Scratch: Stepwise Engineering of Knottin Peptides to Bind Tumor Marker CA IX." International Conference on Biomolecular Engineering, 2011.

S.J. Moore and J.R. Cochran. "Engineering High Affinity Knottin Peptides Targeting Tumor Marker CAIX for Cancer Imaging and Therapy." Annual Symposium of the Protein Society, 2010.

S.J. Moore, S. Subramanian, E.T. Boder. "Tuning Specificity of an Antibody Binding Peptide." Biomedical Engineering Society Annual Fall Meeting, 2004.

Conference Poster Presentations

K. George*, A. Sirois, S.J. Moore. "Engineering diagnostic and therapeutic micro-proteins targeting the interface of tumor biomarkers mesothelin and MUC16." Smith College Celebrating Collaborations Symposium, 2015.

E. Jumai'an*, A.S. Khan*, B. Halasa*, S.J. Moore. "Engineering Proteins to Interrupt the Progression of Alzheimer's Disease." Smith College Celebrating Collaborations Symposium, 2015.

K. Kulason*, N. Smith*, T. Nkhisang*, M. Harrington, S.J. Moore. "Detecting Protein Transport Through the Blood Brain Barrier in the Central Nervous System." Smith College Celebrating Collaborations Symposium, 2015.

S.J. Moore, F. Bassir*, K. George*, A. Sirois. "Engineering Diagnostic and Therapeutic Proteins Targeting the MSLN-MUC16 Tumor Biomarker Interface." Biomedical Engineering Society Annual Meeting, 2014.

F. Bassir*, K. George*, A. Sirois, S.J. Moore. "Engineering diagnostic and therapeutic micro-proteins targeting the interface of tumor biomarkers mesothelin and MUC16." Smith College Celebrating Collaborations Symposium, 2014.

G. Anderson*, W. Wang*, J. Huang*, D. Bonsall, M. Harrington, S.J. Moore. "Protein therapeutics in the central nervous system." Smith College Celebrating Collaborations Symposium, 2014.

S.J. Moore, C.L. Leung, H. Norton, J.R. Cochran. "Engineering Knottin Peptides for Tumor Imaging Applications." Stanford Bio-X Interdisciplinary Initiatives Symposium, Fall 2011.

S.J. Moore and J.R. Cochran. "Engineering High Affinity Knottin Peptides for Tumor Targeting Applications." Siebel Stem Cell Institute Meeting, 2011.

S.J. Moore and J.R. Cochran. "Engineering High Affinity Knottin Peptides Targeting Tumor Marker CAIX for Cancer Imaging and Therapy." Stanford Bio-X Interdisciplinary Initiatives Symposium, Spring 2011.

S.J. Moore and J.R. Cochran. "Engineering High Affinity Knottin Peptides Targeting Tumor Marker CAIX for Cancer Imaging and Therapy." Stanford Cancer Biology Conference, 2010.

S.J. Moore and J.R. Cochran. "Engineering High Affinity Knottin Peptides Targeting Tumor Marker CAIX for Cancer Imaging and Therapy." Annual Symposium of the Protein Society, 2010. Poster presentation. (*Best Graduate Student Poster Award.*)

S.J. Moore, S. Apte, E.E. Graves, J.R. Cochran. "Engineering High Affinity Knottin Peptides Targeting Tumor Marker CAIX for Cancer Imaging and Therapy." Center for Biomedical Imaging at Stanford Symposium, 2010.

S.J. Moore and J.R. Cochran. "Engineering stable peptides to bind tumor antigen Carbonic Anhydrase IX." Stanford Cancer Biology Conference, 2008.

S.J. Moore and J.R. Cochran. "Engineering Peptides to Bind Carbonic Anhydrase IX for Targeted Cancer Therapy and Tumor Imaging." Stanford Department of Bioengineering Annual Retreat, 2007.

S.J. Moore and D.W. Wood. "Engineering a Cyclic Peptide Inhibitor of Tuberculosis Intein Splicing." Princeton University Department of Chemical Engineering Senior Thesis Symposium, 2006.

Seminars and Colloquia

"Engineering Proteins for Cancer Imaging and Therapy." Duke University, Fitzpatrick Institute for Photonics Seminar Series, 2015.

"Engineering Proteins for Cancer Imaging and Therapy." Dartmouth College, Charles C. Jones Seminars on Science, Technology, and Society, 2015.

"Engineering Proteins for Cancer Imaging and Therapy." Worcester Polytechnic Institute, Department of Biomedical Engineering Seminar Series, 2014.

"Engineering Protein Therapeutics and Diagnostics for the Brain." Smith College and University of Massachusetts at Amherst, induction ceremony for Nu Rho Psi, the neuroscience academic honor society, 2014.

“Engineering Proteins for the Detection and Treatment of Cancer.” Smith College, Sigma Xi Seminar Series, 2013.

“Engineering Peptides for Cancer Imaging.” Mount Holyoke College, Department of Physics Seminar Series, 2013.

“Engineering Peptides for Cancer Imaging.” Smith College, Picker Engineering Program, 2012.

“Engineering Knottin Peptides Targeting Carbonic Anhydrase IX for Cancer Imaging.” Stanford University, Program in Radiation Biology Seminar Series, 2010.

10. Other Professional Activities

Occasional reviewer: PLOS ONE, Journal of Molecular Biology

Professional development

Teaching to Increase Diversity and Equity in STEM Summer Institute, Association of American Colleges and Universities (2015)

Davis Foundation Faculty Development Group on Knowledge Building, Smith College (2014-)

Design Thinking Teaching Circle, Smith College (2014-2015)

Transforming STEM Higher Education Conference, Association of American Colleges and Universities (2014)

Engineering and Liberal Education Symposium, Union College (2014)

11. Professional Memberships

Biomedical Engineering Society

American Institute of Chemical Engineers

Society for Biological Engineering

Sigma Xi Scientific Research Society

12. Service Activities

Smith College

Science Center Committee on Diversity (2014-)

Picker Engineering Program, Smith College

Search committee member, Picker Engineering Professor of Practice (2015)

Academic Advising (Liberal Arts and Major Advisees)

2014-2015 – 18 advisees

2013-2014 – 14 advisees

Curriculum Committee (2013-2014)

Faculty adviser to Smith College chapter of Society of Women Engineers (2013-2014)

Special Studies and Student Research Supervised, Smith College

Deepal Patel, '17. “Engineering Peptides as Cancer Diagnostics and Therapeutics.” (2015-)

Elsie Odhiambo, '17. “Engineering Peptides as Cancer Diagnostics and Therapeutics.” (2015-)

Natsai Nyabadza, '17. “Engineering Protein Therapeutics for the Central Nervous System.” (2015-)

Brianna Halasa, '17. "Engineering Proteins to Interrupt the Progression of Alzheimer's Disease." (2015-)
 Eugenie Jumai'an '17. "Engineering Proteins to Interrupt the Progression of Alzheimer's Disease." (2015-)
 Ayesha Khan, '16. "Engineering Proteins to Interrupt the Progression of Alzheimer's Disease." (2015-)
 Allison Sirois, Master of Science student in Biological Sciences, "Engineering Proteins for Diagnosis and Therapy Targeting Tumor Marker Mesothelin." (2014-) (Supervising Master's Thesis)
 Tapiwa Nkhisang, '16. "Understanding the Potential of Protein Therapeutics in the Brain." (2014-)
 Natalie Smith, '16. "Engineering Proteins for Transport into the Brain." (2014-)
 Eliana Perlmutter, '16. "Design for Maternal and Infant Health." (2014)
 Jinglin Huang, '14 "Modeling Protein Therapeutic Transport in the Brain." (2013-2014)
 Gillian Anderson, '14. "Understanding the Potential of Protein Therapeutics in the Brain." (2013-2014)
 Fatima Bassir, '15. "Engineering Peptides for Diagnosing and Treating Breast Cancer." (2013-2015)
 Katia George, '15. "Engineering Diagnostic and Therapeutic Microproteins Targeting the Interface of Tumor Biomarkers Mesothelin and MUC16." (2013-2015) (Supervised Senior Honors Thesis)
 Weishan Wang, '14. "Protein Engineering for Alzheimer's Disease." (2013)

Thesis Committees

Katia George, '15. "Engineering Diagnostic and Therapeutic Microproteins Targeting the Interface of Tumor Biomarkers Mesothelin and MUC16." (2015)
 Jinglin Huang, '14. "A Quantitative Study of the Effects of Solvent Properties on Crystal Growth Morphology." (2014)
 Zhouchangwan Yu, '14. "Investigation of 'Cold Point' Crystallization Method." (2014)

Other

Invited Panelist, The New Normal: Non-Traditional Careers in Synthetic Biology, Synberc Fall Retreat, Massachusetts Institute of Technology. (2014)
 Invited Panelist, Career Opportunities Beyond Graduate School, University of Massachusetts-Amherst Engineering Women Faculty Group. (2013)
 Teaching Lab Coordinator, Department of Bioengineering, Stanford University. (2009-2010)
 Invited Panelist, Welcome Reception for Graduate Engineering Women, School of Engineering, Stanford University. (2009)
 Student Committee Member, Faculty Search, Department of Bioengineering, Stanford University. (2008-2009)
 Outdoor Leadership Training Coordinator, Stanford Pre-Orientation Trips, Department of Athletics and Freshman Dean's Office, Stanford University. (2007-2009)
 Co-President (2005-2006), Teaching Awards Chair (2004-2005), Undergraduate Engineering Council, School of Engineering and Applied Science, Princeton University.
 Engineering Peer Academic Advisor, School of Engineering and Applied Science, Princeton University. (2004-2006)
 Residential Advisor, Princeton University. (2004-2006)

13. Teaching Record

Courses, Smith College

EGR 100: Engineering for Everyone (F'12, F'13, F'14, S'15)
 EGR 110: Fundamental Principles of Engineering (S'13, S'14, S'15)
 EGR 350: Engineering and Cancer (S'13, F'14)

EGR 351: Introduction to Biomedical Engineering (F'13)

Guest Lectures, Smith College

DAN 553: Choreography by Design (C. Aiken), "Empathy and Design." (S'15)

PHI 204: Design: Philosophical Inquiries (E. Spelman), seminar discussion guest (S'15)

BIO 332: Molecular Biology of Eukaryotes (S. Williams), "Engineering Genes to Engineer Proteins." (F'13)

EGR 100: Engineering for Everyone (B. Schliemann), "Introduction to Biomedical Engineering." (F'12, S'13)

BCH 252: Biochemistry I (C. Dehner), "Introduction to Protein Engineering." (S'13)

Teaching, Stanford University

BIOE 331: Protein Engineering, Teaching assistant. (W'09)

MATSCI 81N: Bioengineering Materials to Heal the Body, Guest lecture, "Protein Engineering for Medical Applications." (W'09)

BIOE 301A: Molecular and Cellular Bioengineering Lab, Guest lecture, "Directed Evolution and Green Fluorescent Protein." (F'08)

BIOE 301A: Molecular and Cellular Bioengineering Lab, Teaching assistant. (W'08)

Engineering Outreach Session Leader, School of Engineering Camp E-DAY 2007: Engineering from Head to Toe. Session leader with J.R. Cochran. "From DNA to Designer Proteins: Using Molecular Bioengineering to Heal Wounds." (Summer 2007)

ATH 84: Outdoor Leadership, Instructor, mentored and coordinated undergraduate teaching assistant team. (S'09, W'09, F'08, S'08, W'08, F'07, S'07, W'07)