

Curriculum Vitae
Alanna Schepartz

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Born: January 9, 1962, NYC

Education

1982 B.S., Chemistry; State University of New York, Albany, NY (with S. Bank)
1987 Ph.D., Chemistry; Columbia University, New York, NY (with R. Breslow)

Professional

California Institute of Technology

1986-1988 National Institutes of Health Postdoctoral Fellow (with P.B. Dervan)

Yale University

1988 Assistant Professor of Chemistry
1992 Associate Professor of Chemistry
1994 Milton Harris, '29 Ph.D. Associate Professor of Chemistry
1995 Professor of Chemistry
2000-2017 Milton Harris, '29 Ph.D. Professor of Chemistry
2001-2019 Professor of Molecular, Cellular and Developmental Biology
2002-2007 Howard Hughes Medical Institute Professor
2011-2014 Director, Yale Chemical Biology Institute
2017-2019 Sterling Professor of Chemistry

University of California, Berkeley

2019-present T. Z. and Irmgard Chu Distinguished Chair in Chemistry
2019-present Professor of Molecular and Cellular Biology

Awards and Honors

SUNY@Albany

1982 Presidential Award for Undergraduate Research

Columbia University

1983 Award for Excellence in Teaching
1986 Pegram Award for Graduate Research

California Institute of Technology

1987 N.I.H. Postdoctoral Fellowship

Yale University

1990 David and Lucile Packard Foundation Fellow
1991 Eli Lilly Biochemistry Fellow
1991 Morse Faculty Fellow, Yale University
1991 National Science Foundation Presidential Young Investigator Award
1993 Camille and Henry Dreyfus Teacher-Scholar Award
1994 Alfred P. Sloan Research Fellowship
1995 Invited Lecturer, National Organic Symposium
1995 A.C.S. Arthur C. Cope Scholar Award
1997 A.C.S. Eli Lilly Award in Biological Chemistry
1998-2001 Chair, N.I.H. Study Section on Natural Products and Bioorganic Chemistry
1999 Dylan Hixon '88 Award for Teaching Excellence in the Natural Sciences
2002 Agnes Fay Morgan Research Award, Iota Sigma Pi
2002-2007 Howard Hughes Medical Institute Professor
2003 Fellow, American Association for the Advancement of Science
2003-2005 Editorial Advisory Board, Journal of the American Chemical Society
2005 Invited Lecturer, National Organic Symposium
2005-2016 Associate Editor, *Journal of the American Chemical Society*
2008 Frank H. Westheimer Prize Medal, Harvard University
2010 A.C.S. Chemical Biology Prize & Prize Lecture (inaugural recipient)
2010 Alexander M. Cruickshank Prize
2010 Elected Fellow, American Academy of Arts & Sciences
2010 Elected Fellow, American Chemical Society
2012 A.C.S. Ronald Breslow Award for Achievement in Biomimetic Chemistry
2014 Elected Member, National Academy of Sciences
2015 Elected Member, Connecticut Academy of Science and Engineering
2015 Wheland Prize Medal, University of Chicago
2016 Editor-in-Chief, *Biochemistry*
2017 Sterling Professor, Yale University
2018 Inspiring Yale Award, Yale University
2018 Journal Rejuvenation Award, ACS Publications
2020 ACS Ralph F. Hirschmann Award in Peptide Chemistry

Selected Professional Activities

1995-1996 Member, Organizing Committee, Symposium on the Frontiers of Science
1995-1996 Co-organizer, Symposium on the Chemistry of Gene Regulation, Biological Chemistry Division, American Chemical Society
1995-1998 Member, N.I.H. Study Section on Bioorganic and Natural Products Chemistry
1998-2000 Chair, N.I.H. Study Section on Bioorganic and Natural Products Chemistry

2000 Invited Participant, Presidents Workshop on Gender Equity in Academic Science, MIT
2003-2010 Executive Board, Yale University Center for Genomics and Proteomics
2003-2010 Co-Director, Yale University Center for Chemical Genomics
2005-2016 Associate Editor, *Journal of the American Chemical Society*
2008 Advisory Board, *Faculty of 1000 Medicine Reports*
2009 Co-organizer, Symposium on Seeing Inside Cells, Biological Chemistry Division, American Chemical Society
2008-2013 Member, Searle Scholars Advisory Board Committee
2009-2011 Chair, Yale Chemical Biology Institute Advisory Committee
2010-2013 Chair, Searle Scholars Advisory Board
2010-2019 Member, Yale Comprehensive Cancer Center, Developmental Therapeutics Program
2015 Member, Harvard FAS Life Sciences Review Committee
2015-2016 Selection Committee, Wolf Foundation Prize in Chemistry
2016 Member, Princeton Academic Review Committee (Department of Chemistry)
2016-present Editor-in-Chief, *Biochemistry*
2016-2020 Member, PacifiChem Advisory Board
2017 Member, Harvard Academic Review Committee (Department of Chemistry and Chemical Biology)
2017-2022 Member, Max Planck Institute Scientific Advisory Board
2017-2018 Member and Chair (2018), National Academy of Sciences Award in Chemical Sciences Selection Committee
2019 Member, National Academy of Sciences Class Membership Committee
2019 Editorial Committee, *Annual Review of Biochemistry*

Publications
Alanna Schepartz

1. Substituent Effect on the Electrochemical Oxidation of Arylmethyl Anions. 3. Effect of Methyl Substitution on Diarylmethyl Anions. S. Bank, A. Schepartz, P. Giammateo, J. Zubietta, *J. Org. Chem.* **1983**, *48*, 3548-3564.
2. Hydrolysis of an Amide in a Carboxypeptidase Model Using Co(III) and Bifunctional Catalysts. A. Schepartz & R. Breslow, *J. Am. Chem. Soc.* **1987**, *109*, 1814-1826.
3. On the Mechanism of Catalysis by the Enzyme Carboxypeptidase A. R. Breslow & A. Schepartz, *Chem. Lett.* **1987**, 1-4.
4. Self-Assembling Ionophores. A. Schepartz & J.P. McDevitt, *J. Am. Chem. Soc.* **1989**, *111*, 5976-5977.
5. Site-Specific Cleavage of the Protein Calmodulin Using a Trifluoperazine-Based Affinity Reagent. A. Schepartz & B. Cuenoud, *J. Am. Chem. Soc.* **1990**, *112*, 3247-3249.
6. Synthesis of α -BOC- α -EDTA-Lysine Tribenzyl Ester. An Amino Acid Analog Suitable for Solid Phase Peptide Synthesis. B. Cuenoud & A. Schepartz, *Tetrahedron* **1991**, *47*, 2535-2542.
7. Tethered Oligonucleotide Probes. A Strategy for the Recognition of Structured RNA. P. Richardson & A. Schepartz, *J. Am. Chem. Soc.* **1991**, *113*, 5109-5111.
8. Polyether Tethered Oligonucleotide Probes. S.T. Cload & A. Schepartz, *J. Am. Chem. Soc.* **1991**, *113*, 6324-6326.
9. A General Scheme for Incorporating Nonnatural Functionality into Peptides. B. Cuenoud & A. Schepartz, *Tetrahedron Lett.* **1991**, *32*, 3325-3328.
10. Binding of Alkali Cations by Self-Assembling Ionophore Complexes of Ni(II). M.W. Jones, N. Gupta, A. Schepartz & H. Thorpe, *Inorg. Chem.* **1992**, *31*, 1308-1310.
11. A New Strategy for Directed Protein Cleavage. B. Cuenoud, T. Tarasow & A. Schepartz, *Tetrahedron Lett.* **1992**, *33*, 895-898.
12. Conformation-Dependent Cleavage of Staphylococcal Nuclease with a Disulfide-Linked Iron Chelate. M. Ermacora, J.M. Delfino, B. Cuenoud, A. Schepartz & R.O. Fox, *Proc. Natl. Acad. Sci. USA* **1992**, *89*, 6383-6387.
13. Protein-Cleavage Mapping: A New Tool for Drug Discovery and Protein Folding Studies. M. Hayward & A. Schepartz, in *Perspectives in Medicinal Chemistry*, Testa, B., Kyburz, E., Fuhrer, W.; Giger, R., Eds., Verlag: Basel, **1993**, p. 501-512.
14. Design of a Metallo-bZIP Peptide that Discriminates Between CRE and AP1 Target Sites: Selection Against AP1. B. Cuenoud & A. Schepartz, *Proc. Natl. Acad. Sci. USA* **1993**, *90*, 1154-1159.
15. Altered Specificity of DNA-Binding Proteins with Transition Metal Dimerization Domains. B. Cuenoud & A. Schepartz, *Science* **1993**, *259*, 510-513.
16. A Kinetic and Thermodynamic Analysis of RNA Binding by Tethered Oligonucleotide Probes: Alternative Structures and Conformational Changes. S.T. Cload, P.L. Richardson, Y. Huang & A. Schepartz, *J. Am. Chem. Soc.* **1993**, *115*, 5005-5014.
17. Selection of Structure-Specific Inhibitors of the HIV Rev-Rev Response Element Complex. S.T. Cload & A. Schepartz, *J. Am. Chem. Soc.* **1994**, *116*, 437-443.
18. DNA Targets for Certain bZIP Proteins Distinguished by an Intrinsic Bend. D.N. Paoletta, C.R. Palmer & A. Schepartz, *Science* **1994**, *264*, 1130-1133.

19. Mapping Regions in Eukaryotic Ribosomes that are Accessible to Methidiumpropyl-EDTA•Fe(II) and EDTA•Fe(II). H. Han, A. Schepartz, M. Pelligrini & P.B. Dervan, *Biochemistry* **1994**, *33*, 9831-9844.
20. Distribution of Labor Among CRE-BP1 bZIP Segments in the Control of DNA Affinity and Specificity. S.J. Metallo & A. Schepartz, *Chem. Biol.* **1994**, *1*, 143-152.
21. A Uniquely Modified RNA: Site-Specific Introduction of a Single RNA Cleavage Agent into the M1 Ribozyme. P.L. Richardson, M.L. Gross, R.D. Smith, K.J. Light-Wahl, & A. Schepartz, *Bio. Med. Chem. Lett.* **1994**, *4*, 2133-2138.
22. Mechanistic Studies on the Formation of bZIP•DNA Interfaces: A Simple Example of Supramolecular Stereochemistry. D.N. Paoella, C.R. Palmer, S.J. Metallo & A. Schepartz, in *Supramolecular Stereochemistry*, J. Siegel, Ed. NATO Adv. Ser. **1995**, 83-90.
23. Peptide Models of bZIP Proteins: Quantitative Analysis of DNA Affinity and Specificity. S.J. Metallo & A. Schepartz, *Tech. Protein Chem.* **1995**, *6*, 385-391.
24. Nonspecific DNA Bending and the Specificity of Protein•DNA Interactions. A. Schepartz, *Science* **1995**, *269*, 988-989.
25. Convenient Syntheses of Reagents for Cleavage Mapping Experiments. M. H. Hayward, J. C. Adrian, Jr. & A. Schepartz, *J. Org. Chem.* **1995**, *60*, 3924-3927.
26. Mechanism of DNA Binding Enhancement by the HTLV-I Transactivator Tax. A.M. Baranger, C.R. Palmer, M.K. Hamm, H. A. Giebler, A. Brauweiler, J.K. Nyborg, & A. Schepartz, *Nature* **1995**, *376*, 606-608.
27. DNA Bending and Binding by Metallo-Peptide Models of bZIP Proteins. C.R. Palmer, L.S. Sloan, J.C. Adrian, Jr., B. Cuenoud, D.N. Paoella & A. Schepartz, *J. Am. Chem. Soc.* **1995**, *117*, 8899-8907.
28. Studies on the Formation of Protein•DNA Interfaces: DNA Specificity and Straightening by CREB. M.K. Hamm & A. Schepartz, *Bio. Med. Chem. Lett.* **1995**, *5*, 1621-1626.
29. Conformation of Tax-response elements in the human T-cell leukemia virus type I promoter. J.M. Cox, L.S. Sloan & A. Schepartz, *Chem. Biol.* **1995**, *2*, 819-826.
30. Triplex Tethered Oligonucleotide Probes. A.C. Moses & A. Schepartz, *J. Am. Chem. Soc.* **1996**, *118*, 10896-10897.
31. Certain bZIP Proteins Bind DNA Sequentially as Monomers and Dimerize on the DNA. S.J. Metallo & A. Schepartz, *Nat. Str. Biol.* **1997**, *4*, 115-117.
32. Inhibition of Rev•RRE Complexation by Triplex Tethered Oligonucleotide Probes. A.C. Moses, S.W. Huang & A. Schepartz, *Bioorg. Med. Chem.* **1997**, *5*, 1123-1129.
33. Electrostatic Mechanism for DNA Bending by bZIP Proteins. D.N. Paoella, Y. Liu & A. Schepartz, *Biochemistry* **1997**, *36*, 10033-10038.
34. Bidirectional Binding of TBP to the TATA Box. J.M. Cox, M.H. Hayward, J.F. Sanchez, L.D. Gegnas, S. van der Zee, J.H. Dennis, P.B. Sigler, & A. Schepartz, *Proc. Natl. Acad. Sci. USA* **1997**, *94*, 13475-13480.
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36. Kinetics and Mechanism of RNA Binding by Triplex Tethered Oligonucleotide Probes. A.C. Moses & A. Schepartz, *J. Am. Chem. Soc.* **1997**, *119*, 11591-11597.

37. Induced DNA bending by the Zn₂Cys₆ binuclear cluster protein PUT3. P. Hoffmann & A. Schepartz, *Bio. Med. Chem. Lett.* **1997**, *7*, 2049-2054.
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39. Sequence determinants of the intrinsic bend in the cyclic AMP response element. L.S. Sloan & A. Schepartz, *Biochemistry* **1998**, *37*, 7113-7118.
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41. At the chemistry-biology interface. A. Schepartz & P.S. Kim, *Curr. Op. Chem. Biol.* **1998**, *2*, 9-10.
42. Polarity of transcription on Pol II and archaeal promoters: where is the "one-way sign" and how is it read? F.T. Tsai, O. Littlefield, P.F. Kosa, J. M. Cox, A. Schepartz & P.B. Sigler, *Cold Spring Harb. Symp. Quant. Biol.* **1998**, *63*, 53-61.
43. Highly specific DNA recognition by a designed, miniature protein. N.J. Zondlo & A. Schepartz, *J. Am. Chem. Soc.* **1999**, *121*, 6938-6939.
44. DNA specificity enhanced by sequential binding of protein monomers. J.J. Kohler, S.J. Metallo, T.L. Schneider & A. Schepartz, *Proc. Natl. Acad. Sci. USA* **1999**, *96*, 11735-11739.
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49. Kinetic studies of Fos•Jun•DNA complex formation: DNA binding prior to dimerization. J.J. Kohler & A. Schepartz, *Biochemistry* **2001**, *40*, 130-142.
50. Kinetic Preference for Oriented DNA Binding by the Yeast TATA-Binding Protein TBP. Y. Liu & A. Schepartz, *Biochemistry* **2001**, *40*, 6257-6266.
51. A Roller Coaster Ride of Thrills. A. Schepartz, *Chem. Eng. News* **2001**, 125th Anniversary Issue.
52. Hepatitis B Virus protein pX enhances monomer assembly pathway of bZIP•DNA complexes. T.L. Schneider & A. Schepartz, *Biochemistry* **2001**, *40*, 2835-2843.
53. Methodology for optimizing functional miniature proteins based on avian pancreatic polypeptide using phage display. J.W. Chin, R.M. Grotzfeld, M.A. Fabian & A. Schepartz, *Bioorg. Med. Chem. Lett.* **2001**, *11*, 1501-1505.
54. Effects of nucleic acids and polyanions on dimer formation and DNA binding by dimeric transcription factors. J.J. Kohler & A. Schepartz, *Bioorg. Med. Chem.* **2001**, *9*, 2435-2443.
55. Design and evolution of a miniature Bcl-2 binding protein. J.W. Chin & A. Schepartz, *Angew. Chem. Int. Ed. Eng.* **2001**, *40*, 3806-3809. **Highlight:** *Science* **2001**, *291*, 2049.

56. Electrostatic Control of Half-Site Spacing Preferences by the cyclic AMP Response Element Binding Protein CREB. J.K. Montclare, L.S. Sloan & A. Schepartz, *Nucl. Acids Res.* **2001**, *29*, 3311-3319.
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58. A View to a Kill: Ligands for Bcl-2 family proteins. S.E. Rutledge, J.W. Chin & A. Schepartz, *Curr. Op. Chem. Biol.* **2002**, *6*, 479-485.
59. Miniature Homeodomains: High specificity without an N-terminal arm. J.K. Montclare & A. Schepartz, *J. Am. Chem. Soc.* **2003**, *125*, 3416.
60. Helix macrodipole control of β^3 -peptide 14-helix stability in water. S.A. Hart, A.B.F. Bahadoor, E.E. Matthews, & A. Schepartz, *J. Am. Chem. Soc.* **2003**, *125*, 4022.
61. Molecular recognition of protein surfaces: High affinity ligands for the CBP KIX domain. S.E. Rutledge, H. M. Volkman & A. Schepartz, *J. Am. Chem. Soc.* **2003**, *125*, 14336.
62. High affinity, paralog-specific recognition of the Mena EVH1 domain by a miniature protein. D. Golemi-Kotra, R. Mahaffy, M.J. Footer, J.H. Holtzman, T.D. Pollard, J.A. Theriot & A. Schepartz, *J. Am. Chem. Soc.* **2004**, *126*, 4.
63. Helical β -peptide inhibitors of the p53-hDM2 interaction. J.A. Kritzer, J.D. Lear, M. Hodsdon & A. Schepartz, *J. Am. Chem. Soc.* **2004**, *126*, 9468-9469.
64. Relationship between side chain structure and 14-helix stability of β^3 -peptides in water. J.A. Kritzer, J. Tirado-Rives, S.A. Hart, J.D. Lear, W.L. Jorgensen, & A. Schepartz, *J. Am. Chem. Soc.* **2005**, *127*, 167-178.
65. Paralog-selective ligands for Bcl-2 proteins. A.C. Gemperli, S.E. Rutledge, A. Maranda & A. Schepartz, *J. Am. Chem. Soc.* **2005**, *127*, 1596-1597.
66. Binding mode and transcriptional activation potential of high affinity ligands for the CBP KIX domain. H.M. Volkman, S.E. Rutledge, and A. Schepartz, *J. Am. Chem. Soc.* **2005**, *127*, 4649-4658.
67. β -peptide inhibitors of protein-protein interactions. J.A. Kritzer, O.M. Stephens, D.A. Guarracino. S.K. Reznik & A. Schepartz, *Bio. Med. Chem.* **2005**, *13*, 11-16.
68. Dephosphorylation of Phosphopeptides by Cerium(IV) and Other Lanthanide Ions. N.W. Luedtke & A. Schepartz, *Chem. Comm.* **2005**, *43*, 5426-5428.
69. Solution Structure of a β -peptide Ligand for hDM2. J.A. Kritzer, M.E. Hodsdon & A. Schepartz, *J. Am. Chem. Soc.* **2005**, *127*, 4118-4119.
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73. A Rapid Library Screen for Tailoring β -peptide Structure and Function. J.A. Kritzer, N.W. Luedtke, E. Harker, & A. Schepartz, *J. Am. Chem. Soc.* **2005**, *127*, 14584-14585. **Highlight:** Faculty of 1000: <http://www.f1000biology.com/article/id/1028774/evaluation>

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75. Relationship between salt-bridge identity and 14-helix stability of β^3 -peptides in aqueous buffer. D.A. Guarracino, H.R. Chiang, T.N. Banks, J.D. Lear, M.E. Hodsdon & A. Schepartz, *Org Lett.* **2006**, *8*, 807-810.
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79. Biophysical characterization of a β -peptide bundle: Comparison to natural proteins. E.J. Petersson, C. Craig, D.S. Daniels, J.X. Qiu, & A. Schepartz, *J. Am. Chem. Soc.* **2007**, *129*, 1532-1533.
80. Surveying protein conformation and association in live cells with small-molecule fluorescence. N. Luedtke, R. Dexter, D. Fried & A. Schepartz, *Nat. Chem. Biol.* **2007**, *3*, 779-784. . **Highlight:** *Science* **2007**, *318*, 1217; **Highlight:** *Nat. Methods* **2008**, *5*, 6-7
81. Miniature protein ligands for EVH1 domains: Interplay between affinity, specificity, and cell motility. J.H. Holtzman, D. Golemi-Kotra, K. Woronowicz & A. Schepartz, *Biochemistry* **2007**, *46*, 13541-13553.
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84. Biophysical and structural characterization of a robust octameric β -peptide bundle. J.L. Goodman, D.S. Daniels, J.X. Qiu, E.J. Petersson & A. Schepartz, *J. Am. Chem. Soc.* **2007**, *129*, 14746-14751.
85. Toward β -amino acid proteins: Design, synthesis, and characterization of a fifteen kilodalton β -peptide tetramer. E.J. Petersson & A. Schepartz, *J. Am. Chem. Soc.* **2008**, *130*, 821-823.
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88. Selective recognition of protein tetraserine motifs with a cell-permeable, pro-fluorescent bis-boronic acid. T.L. Halo, J. Appelbaum, E.M. Hobert, D.M. Balkin, & A. Schepartz, *J. Am.*

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 99. Enhancing β^3 -peptide bundle stability by design. C.J. Craig, J.L. Goodman, & A. Schepartz, *ChemBioChem* **2011**, *12*, 1035-1038.
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 101. Molecular imaging: *sine labore nihil*. A. Schepartz & R.L. Gonzalez Jr., *Curr. Opin. Chem. Biol.* **2011**, *15*, 749-751.
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