



Annelise E. Barron

Associate Professor of Bioengineering

 Curriculum Vitae available Online

Bio

BIO

Annelise E. Barron is the W.M. Keck Associate Professor of Bioengineering at Stanford University, where her research is currently focused on (1) biomimicry of host defense peptides and lung surfactant proteins, and (2) elucidating the underlying mechanisms of Alzheimer's dementia, as potentially caused by dysregulation of innate immunity caused by chronic infections. Dr. Barron was trained as a chemical engineer at the University of Washington (B.S.) and U.C. Berkeley (Ph.D.), and was a Pharmaceutical Chemistry postdoc with Ken A. Dill (UCSF) and Ronald N. Zuckermann (Chiron Corp.). She has served on the faculty at Stanford since 2007, and prior to that, was on the Chemical & Biological Engineering faculty of Northwestern University in Evanston, IL for 10 years. She has been awarded the Presidential Early Career Award for Scientists & Engineers (PECASE), the Beckman Young Investigator Award, and the Camille Dreyfus Teacher-Scholar Award, among other awards. Dr. Barron was the youngest scientist ever to serve on the Scientific Advisory Committee to the Director of the NIH, under Dr. Elias Zerhouni. She has more than 149 publications and a current H-index of 44, and serves on the advisory boards of several biotechnology companies.

ACADEMIC APPOINTMENTS

- Associate Professor, Bioengineering
- Member, Bio-X
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- National Hispanic Scholar, Univ. of Washington, Seattle (1986)
- Tektronix Foundation Merit Scholarship, Univ. of Washington, Seattle (1986)
- University of Washington Undergraduate Merit Scholarship (two consecutive years), Univ. of Washington, Seattle (1988, 1989)
- H.K. Benson Chemical Engineering Tuition Scholarship, Univ. of Washington, Seattle (1989)
- 1986-1990 National Merit Scholar and Recipient of Associated Four-Year Scholarship, National Merit Scholarship Corporation (1986-1990)
- 1990-1993 U.C. Berkeley Chancellor's Minority Pre-doctoral Fellowship, U.C. Berkeley (1990-1993)
- Outstanding Graduate Student Instructor Award, U.C. Berkeley Dept. of Chemical Engineering, U.C. Berkeley (1993)
- U.C. Berkeley Provost's Research Fund Grant, U.C. Berkeley (1993)
- Matheson Fellowship in Chemical Engineering, U.C. Berkeley (1994)
- University of California Minority Dissertation Year Fellowship, U.C. Berkeley (1994)
- Dow Excellence in Teaching Award, 1994, U.C. Berkeley Department of Chemical Engineering, U.C. Berkeley (1994)
- NIH National Research Service Award (Postdoctoral Fellowship #1 F32 GM 18112), National Institutes of Health (1996)

- Beckman Young Investigator Award, Arnold & Mabel Beckman Foundation (1998-99)
- Presidential Early Career Award for Scientists and Engineers, NIH/NHGRI (1999)
- DuPont Young Professor Award, DuPont, Inc. (2002)
- Camille Dreyfus Teacher-Scholar Award, Camille and Henry Dreyfus Foundation (2002)
- Thiele Lecturer in Chemical Engineering, University of Notre Dame (2005)
- W.M. Keck Associate Professor of Bioengineering, Stanford University (2007-present)
- Nanobio Scholar, Virginia Tech (2011)
- Invited Participant, 2015 Nobel Symposium: Amyloid: A multifaceted player in human health and disease, Stockholm (June 10-11, 2015)
- Invited Lecturer, Molecular Foundry, Lawrence Berkeley National Laboratory (March 6, 2018)

PROFESSIONAL EDUCATION

- Postdoc, UCSF/Chiron Corporation , Biomimetic & Bioorganic Chemistry (1997)
- Postdoc, Soane BioSciences/ACLARA Biosciences Inc. , Molecular Biotechnology (1996)
- Ph.D., Univ. of California, Berkeley , Chemical Engineering (1995)
- B.S., Univ. of Washington, Seattle , Chemical Engineering (1990)

LINKS

- Barron lab web page: <http://www.stanford.edu/group/barronlab/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

According to our recent findings, innate immune responses in humans and other mammals involving infection-, injury-, or stress-related dynamic imbalances between particular, potentially cytotoxic host defense peptides we study, and pro-amyloid / fibrillogenic peptides including ABeta and IAPP, may play a role in the poorly understood etiology of chronic / progressive plaque diseases, including psoriasis, lupus erythematosus, diabetes type II mellitus, atherosclerosis, and particularly, Alzheimers Disease. All of these diseases involve senescent/dystrophic cells, inflammation, and proteopathies with plaque accumulation; and can be complicated by infection.

The latter disease, Alzheimers, is in need of a major breakthrough in fundamental understanding, more than almost any human disease currently under study. Of a total of 415+ clinical trials initiated by Pharma towards the development of Alzheimer's treatments over the past 14 years, all of these trials have failed. There is no current effective treatment. Obviously, the most fundamental ideas for what drives Alzheimers must be flawed or incomplete.

Until recently Alzheimers disease was believed to be the sixth leading cause of death in the United States, according to the Centers for Disease Control and Prevention (CDC). But in March 2014, new research published in Neurology suggested that Alzheimers may actually be responsible for as many deaths each year as heart disease or cancer – the two leading causes of death in the U.S. – due to issues, in hospitals, of improper prior determinations of underlying cause of death in the elderly.

My lab is testing novel mechanistic hypotheses of Alzheimers etiology, based on recent, unique molecular biophysical observations of pro-amyloid and innate immune peptides. We are also looking at linkages to certain chronic infections.

Increasing numbers of epidemiological and co-morbidity studies indicate that multiple, progressive degenerative diseases, all involving plaque deposition in various body compartments, are linked. For instance, some researchers have begun to refer to Alzheimers Disease as "Diabetes Mellitus Type III". We seek, with current projects, to sleuth out the shared molecular biophysical bases for these emerging linkages.

(Note: Succinct, exemplary summaries of these fascinating epidemiological / comorbidity linkages are found, for instance, in the following papers: "The 'psoriatic march': a concept of how severe psoriasis may drive cardiovascular comorbidity", *Experimental Dermatology* (2011) 20, 303–307; "Circle of Willis atherosclerosis: association with Alzheimer's disease, neuritic plaques and neurofibrillary tangles", *Acta Neuropathol* (2007) 113:13–21; "Increased prevalence of the metabolic syndrome in patients with moderate to severe psoriasis", *Arch Dermatol Res* (2006) 298: 321–328; "Association of Alzheimer disease pathology with abnormal lipid metabolism", *Neurology* (2011) 77:1068).

Teaching

COURSES

2019-20

- Advances in Biotechnology: BIOE 450, CHEMENG 450 (Spr)
- Biophysical Mechanisms of Innate Immunity: BIOE 236 (Win)

2018-19

- Advances in Biotechnology: BIOE 450, CHEMENG 450 (Spr)

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Bioengineering (Phd Program)
- Biophysics (Phd Program)
- Medicine (Masters Program)

Publications

PUBLICATIONS

- **Helical side chain chemistry of a peptoid-based SP-C analogue: Balancing structural rigidity and biomimicry.** *Biopolymers*
Brown, N. J., Lin, J. S., Barron, A. E.
2019; e23277
- **Role of Microbes in the Development of Alzheimer's Disease: State of the Art - An International Symposium Presented at the 2017 IAGG Congress in San Francisco** *FRONTIERS IN GENETICS*
Fulop, T., Itzhaki, R. F., Balin, B. J., Miklossy, J., Barron, A. E.
2018; 9
- **Effective in vivo treatment of acute lung injury with helical, amphipathic peptoid mimics of pulmonary surfactant proteins** *SCIENTIFIC REPORTS*
Czyzewski, A. M., McCaig, L. M., Dohm, M. T., Broering, L. A., Yao, L., Brown, N. J., Didwania, M. K., Lin, J. S., Lewis, J. F., Veldhuizen, R., Barron, A. E.
2018; 8: 6795
- **Intracellular biomass flocculation as a key mechanism of rapid bacterial killing by cationic, amphipathic antimicrobial peptides and peptoids.** *Scientific reports*
Chongsiriwatana, N. P., Lin, J. S., Kapoor, R., Wetzler, M., Rea, J. A., Didwania, M. K., Contag, C. H., Barron, A. E.
2017; 7 (1): 16718
- **Evidence that the Human Innate Immune Peptide LL-37 may be a Binding Partner of Amyloid- β and Inhibitor of Fibril Assembly.** *Journal of Alzheimer's disease : JAD*
De Lorenzi, E., Chiari, M., Colombo, R., Cretich, M., Sola, L., Vanna, R., Gagni, P., Bisceglia, F., Morasso, C., Lin, J. S., Lee, M., McGeer, P. L., Barron, et al
2017; 59 (4): 1213–26
- **Evidence that the Human Innate Immune Peptide LL-37 may be a Binding Partner of Amyloid- β and Inhibitor of Fibril Assembly** *Journal of Alzheimer's Disease*
De Lorenzi, E., Chiari, M., Colombo, R., Cretich, M., Sola, L., Vanna, R., Gagni, P., Bisceglia, F., Morasso, C., Lin, J. S., Lee, M., McGeer, P. L., Barron, et al
2017; 59 (4): 1213-1226

- **In Vivo, In Vitro, and In Silico Characterization of Peptoids as Antimicrobial Agents** *PLOS ONE*
Czyzewski, A. M., Jenssen, H., Fjell, C. D., Waldbrook, M., Chongsiriwatana, N. P., Yuen, E., Hancock, R. E., Barron, A. E.
2016; 11 (2): 1-17
- **Human antimicrobial peptide LL-37 induces glial-mediated neuroinflammation** *BIOCHEMICAL PHARMACOLOGY*
Lee, M., Shi, X., Barron, A. E., McGeer, E., McGeer, P. L.
2015; 94 (2): 130-141
- **Viperidins: a novel family of cathelicidin-related peptides from the venom gland of South American pit vipers** *AMINO ACIDS*
Falcao, C. B., de la Torre, B. G., Perez-Peinado, C., Barron, A. E., Andreu, D., Radis-Baptista, G.
2014; 46 (11): 2561-2571
- **A tunable silk-alginate hydrogel scaffold for stem cell culture and transplantation.** *Biomaterials*
Ziv, K., Nuhn, H., Ben-Haim, Y., Sasportas, L. S., Kempen, P. J., Niedringhaus, T. P., Hrynyk, M., Sinclair, R., Barron, A. E., Gambhir, S. S.
2014; 35 (12): 3736-3743
- **Learning from host-defense peptides: cationic, amphipathic peptoids with potent anticancer activity.** *PloS one*
Huang, W., Seo, J., Willingham, S. B., Czyzewski, A. M., Gonzalgo, M. L., Weissman, I. L., Barron, A. E.
2014; 9 (2)
- **The Incorporation of Extracellular Matrix Proteins in Protein Polymer Hydrogels to Improve Encapsulated Beta-cell Function.** *Annals of clinical and laboratory science*
Beenken-Rothkopf, L. N., Karfeld-Sulzer, L. S., Davis, N. E., Forster, R., Barron, A. E., Fontaine, M. J.
2013; 43 (2): 111-121
- **Encapsulation of protein microfiber networks supporting pancreatic islets.** *Journal of biomedical materials research. Part A*
Steele, J. A., Barron, A. E., Carmona, E., Hallé, J., Neufeld, R. J.
2012; 100 (12): 3384-3391
- **Enhanced function of pancreatic islets co-encapsulated with ECM proteins and mesenchymal stromal cells in a silk hydrogel** *BIOMATERIALS*
Davis, N. E., Beenken-Rothkopf, L. N., Mirsoian, A., Kojic, N., Kaplan, D. L., Barron, A. E., Fontaine, M. J.
2012; 33 (28): 6691-6697
- **In Vivo Biodistribution and Small Animal PET of Cu-64-Labeled Antimicrobial Peptoids** *BIOCONJUGATE CHEMISTRY*
Seo, J., Ren, G., Liu, H., Miao, Z., Park, M., Wang, Y., Miller, T. M., Barron, A. E., Cheng, Z.
2012; 23 (5): 1069-1079
- **Synthesis and Assembly of Functional High Molecular Weight Adiponectin Multimers in an Engineered Strain of Escherichia coli** *BIOMACROMOLECULES*
Ding, S., Pinkas, D. M., Barron, A. E.
2012; 13 (4): 1035-1042
- **Efficacy of Antimicrobial Peptoids against Mycobacterium tuberculosis** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY*
Kapoor, R., Eimerman, P. R., Hardy, J. W., Cirillo, J. D., Contag, C. H., Barron, A. E.
2011; 55 (6): 3058-3062
- **Antimicrobial Peptoids Are Effective against Pseudomonas aeruginosa Biofilms** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY*
Kapoor, R., Wadman, M. W., Dohm, M. T., Czyzewski, A. M., Spormann, A. M., Barron, A. E.
2011; 55 (6): 3054-3057
- **Completely Monodisperse, Highly Repetitive Proteins for Bioconjugate Capillary Electrophoresis: Development and Characterization** *BIOMACROMOLECULES*
Lin, J. S., Albrecht, J. C., Meagher, R. J., Wang, X., Barron, A. E.
2011; 12 (6): 2275-2284
- **Tunable, Post-translational Hydroxylation of Collagen Domains in Escherichia coli** *ACS CHEMICAL BIOLOGY*
Pinkas, D. M., Ding, S., Raines, R. T., Barron, A. E.
2011; 6 (4): 320-324
- **A 265-Base DNA Sequencing Read by Capillary Electrophoresis with No Separation Matrix** *ANALYTICAL CHEMISTRY*

- Albrecht, J. C., Lin, J. S., Barron, A. E.
2011; 83 (2): 509-515
- **Protein Polymer MRI Contrast Agents: Longitudinal Analysis of Biomaterials In Vivo** *MAGNETIC RESONANCE IN MEDICINE*
Karfeld-Sulzer, L. S., Waters, E. A., Kohlmeir, E. K., Kissler, H., Zhang, X., Kaufman, D. B., Barron, A. E., Meade, T. J.
2011; 65 (1): 220-228
 - **Short Alkylated Peptoid Mimics of Antimicrobial Lipopeptides** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY*
Chongsiriwatana, N. P., Miller, T. M., Wetzler, M., Vakulenko, S., Karlsson, A. J., Palecek, S. P., Mobashery, S., Barron, A. E.
2011; 55 (1): 417-420
 - **Helical side chain chemistry of a peptoid-based SP-C analogue: Balancing structural rigidity and biomimicry** *BIOPOLYMERS*
Brown, N. J., Lin, J. S., Barron, A. E.
2019; 110 (6)
 - **Periprosthetic Bacterial Biofilm and Quorum Sensing** *JOURNAL OF ORTHOPAEDIC RESEARCH*
Mooney, J. A., Pridgen, E. M., Manasherob, R., Suh, G., Blackwell, H. E., Barron, A. E., Bollyky, P. L., Goodman, S. B., Amanatullah, D. F.
2018; 36 (9): 2331-39
 - **Evidence that the Human Innate Immune Peptide LL-37 May Be a Binding Partner of A β and Inhibitor of Fibril Assembly**
De Lorenzi, E., Chiari, M., Colombo, R., Cretich, M., Sola, L., Vanna, R., Gagni, P., Bisceglia, F., Morasso, C., Lin, J. S., Lee, M., McGeer, P. L., Barron, et al
CELL PRESS.2018: 393A
 - **Effect of side chain hydrophobicity and cationic charge on antimicrobial activity and cytotoxicity of helical peptoids.** *Bioorganic & medicinal chemistry letters*
Lee, J., Kang, D., Choi, J., Huang, W., Wadman, M., Barron, A. E., Seo, J.
2018; 28 (2): 170-73
 - **Implant-Associated Bacterial Biofilm and Quorum Sensing in Periprosthetic Joint Infections.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
Mooney, J. A., Pridgen, E. M., Manasherob, R., Suh, G., Blackwell, H. E., Barron, A. E., Bollyky, P. L., Goodman, S. B., Amanatullah, D. F.
2018
 - **In Vivo, In Vitro, and In Silico Characterization of Peptoids as Antimicrobial Agents** *PLOS ONE*
Czyzewski, A. M., Jossen, H., Fjell, C. D., Waldbrook, M., Chongsiriwatana, N. P., Yuen, E., Hancock, R. E., Barron, A. E.
2016; 11 (2)
 - **Prostate tumor specific peptide-peptoid hybrid prodrugs** *BIOORGANIC & MEDICINAL CHEMISTRY LETTERS*
Lee, J., Huang, W., Broering, J. M., Barron, A. E., Seo, J.
2015; 25 (14): 2849-2852
 - **No evidence of pathogenic involvement of cathelicidins in patient cohorts and mouse models of lupus and arthritis.** *PloS one*
Kienhöfer, D., Hahn, J., Schubert, I., REINWALD, C., Ipseiz, N., Lang, S. C., Borràs, È. B., Amann, K., Sjöwall, C., Barron, A. E., Hueber, A. J., Agerberth, B., Schett, et al
2014; 9 (12)
 - **Protein polymer hydrogels: Effects of endotoxin on biocompatibility.** *Journal of biomaterials applications*
Beenken-Rothkopf, L. N., Karfeld-Sulzer, L. S., Zhang, X., Kissler, H., Michie, S. A., Kaufman, D. B., Fontaine, M. J., Barron, A. E.
2013; 28 (3): 395-406
 - **A Readily Applicable Strategy to Convert Peptides to Peptoid-based Therapeutics** *PLOS ONE*
Park, M., Wetzler, M., Jardetzky, T. S., Barron, A. E.
2013; 8 (3)
 - **Encapsulation of protein microfiber networks supporting pancreatic islets** *JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART A*
Steele, J. A., Barron, A. E., Carmona, E., Halle, J., Neufeld, R. J.
2012; 100A (12): 3384-3391
 - **Microfabricated devices for biomolecule encapsulation** *ELECTROPHORESIS*
Desmarais, S. M., Haagsman, H. P., Barron, A. E.
2012; 33 (17): 2639-2649

- **A Four-Arm Star-Shaped Poly(ethylene glycol) (StarPEG) Platform for Bombesin Peptide Delivery to Gastrin-Releasing Peptide Receptors in Prostate Cancer** *ACS MACRO LETTERS*
Xu, Y., Huang, W., Ren, G., Qi, S., Jiang, H., Miao, Z., Liu, H., Lucente, E., Bu, L., Shen, B., Barron, A., Cheng, Z.
2012; 1 (6): 753-757
- **Alginate-PEG Sponge Architecture and Role in the Design of Insulin Release Dressings** *BIOMACROMOLECULES*
Hrynyk, M., Martins-Green, M., Barron, A. E., Neufeld, R. J.
2012; 13 (5): 1478-1485
- **Quantitative experimental determination of primer-dimer formation risk by free-solution conjugate electrophoresis** *ELECTROPHORESIS*
Desmarais, S. M., Leitner, T., Barron, A. E.
2012; 33 (3): 483-491
- **Monodisperse, "Highly" Positively Charged Protein Polymer Drag-Tags Generated in an Intein-Mediated Purification System Used in Free-Solution Electrophoretic Separations of DNA** *BIOMACROMOLECULES*
Wang, X., Albrecht, J. C., Lin, J. S., Barron, A. E.
2012; 13 (1): 117-123
- **Peptoid transporters: effects of cationic, amphipathic structure on their cellular uptake** *MOLECULAR BIOSYSTEMS*
Huang, W., Seo, J., Lin, J. S., Barron, A. E.
2012; 8 (10): 2626-2628
- **In Vivo Biodistribution and Small Animal PET of (64)Cu-Labeled Antimicrobial Peptoids.** *Bioconjugate chemistry*
Seo, J., Ren, G., Liu, H., Miao, Z., Park, M., Wang, Y., Miller, T. M., Barron, A. E., Cheng, Z.
2012
- **Ultrafast, efficient separations of large-sized dsDNA in a blended polymer matrix by microfluidic chip electrophoresis: A design of experiments approach** *ELECTROPHORESIS*
Sun, M., Lin, J. S., Barron, A. E.
2011; 32 (22): 3233-3240
- **Blinded study determination of high sensitivity and specificity microchip electrophoresis-SSCP/HA to detect mutations in the p53 gene** *ELECTROPHORESIS*
Hestekin, C. N., Lin, J. S., Senderowicz, L., Jakupciak, J. P., O'Connell, C., Rademaker, A., Barron, A. E.
2011; 32 (21): 2921-2929
- **Functional Synergy between Antimicrobial Peptoids and Peptides against Gram-Negative Bacteria** *ANTIMICROBIAL AGENTS AND CHEMOTHERAPY*
Chongsiriwatana, N. P., Wetzler, M., Barron, A. E.
2011; 55 (11): 5399-5402
- **Biomimetic N-Terminal Alkylation of Peptoid Analogues of Surfactant Protein C** *BIOPHYSICAL JOURNAL*
Brown, N. J., Dohm, M. T., de la Serna, J. B., Barron, A. E.
2011; 101 (5): 1076-1085
- **A modular microfluidic system for deoxyribonucleic acid identification by short tandem repeat analysis (vol 687, pg 150, 2011)** *ANALYTICA CHIMICA ACTA*
Reedy, C. R., Hagan, K. A., Marchiarullo, D. J., Dewald, A. H., Barron, A., Bienvenue, J. M., Landers, J. P.
2011; 699 (1): 126-126
- **Peptoids: Bio-Inspired Polymers as Potential Pharmaceuticals** *CURRENT PHARMACEUTICAL DESIGN*
Dohm, M. T., Kapoor, R., Barron, A. E.
2011; 17 (25): 2732-2747
- **Landscape of Next-Generation Sequencing Technologies** *ANALYTICAL CHEMISTRY*
Niedringhaus, T. P., Milanova, D., Kerby, M. B., Snyder, M. P., Barron, A. E.
2011; 83 (12): 4327-4341
- **Non-ionic, thermo-responsive DEA/DMA nanogels: Synthesis, characterization, and use for DNA separations by microchip electrophoresis** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
Lu, X., Sun, M., Barron, A. E.

2011; 357 (2): 345-353

- **Free-solution electrophoretic separations of DNA-drag-tag conjugates on glass microchips with no polymer network and no loss of resolution at increased electric field strength** *ELECTROPHORESIS*

Albrecht, J. C., Kerby, M. B., Niedringhaus, T. P., Lin, J. S., Wang, X., Barron, A. E.

2011; 32 (10): 1201-1208

- **A modular microfluidic system for deoxyribonucleic acid identification by short tandem repeat analysis** *ANALYTICA CHIMICA ACTA*

Reedy, C. R., Hagan, K. A., Marchiarullo, D. J., Dewald, A. H., Barron, A., Bienvenue, J. M., Landers, J. P.

2011; 687 (2): 150-158

- **A fluorescence polarization assay using an engineered human respiratory syncytial virus F protein as a direct screening platform** *ANALYTICAL BIOCHEMISTRY*

Park, M., Matsuura, H., Lamb, R. A., Barron, A. E., Jardetzky, T. S.

2011; 409 (2): 195-201

- **PROTEIN POLYMERS Gene libraries open up** *NATURE MATERIALS*

Ding, S., Wang, X., Barron, A. E.

2011; 10 (2): 83-84

- **Purification of HIV RNA from Serum Using a Polymer Capture Matrix in a Microfluidic Device** *ANALYTICAL CHEMISTRY*

Root, B. E., Agarwal, A. K., Kelso, D. M., Barron, A. E.

2011; 83 (3): 982-988

- **Progress in the De Novo Design of Structured Peptoid Protein Mimics** *BIOPOLYMERS*

Wetzler, M., Barron, A. E.

2011; 96 (5): 556-560

- **A Chemically Synthesized Peptoid-Based Drag-Tag Enhances Free-Solution DNA Sequencing by Capillary Electrophoresis** *BIOPOLYMERS*

Haynes, R. D., Meagher, R. J., Barron, A. E.

2011; 96 (5): 702-707

- **NMEGylation: A Novel Modification to Enhance the Bioavailability of Therapeutic Peptides** *BIOPOLYMERS*

Park, M., Jardetzky, T. S., Barron, A. E.

2011; 96 (5): 688-693

- **Sustained prolonged topical delivery of bioactive human insulin for potential treatment of cutaneous wounds** *INTERNATIONAL JOURNAL OF PHARMACEUTICS*

Hrynyk, M., Martins-Green, M., Barron, A. E., Neufeld, R. J.

2010; 398 (1-2): 146-154

- **Modular enzymatically crosslinked protein polymer hydrogels for in situ gelation** *BIOMATERIALS*

Davis, N. E., Ding, S., Forster, R. E., Pinkas, D. M., Barron, A. E.

2010; 31 (28): 7288-7297

- **Mimicking SP-C palmitoylation on a peptoid-based SP-B analogue markedly improves surface activity** *BIOCHIMICA ET BIOPHYSICA ACTA-BIOMEMBRANES*

Dohm, M. T., Brown, N. J., Seuryneck-Servoss, S. L., de la Serna, J. B., Barron, A. E.

2010; 1798 (9): 1663-1678

- **Biophysical Mimicry of Lung Surfactant Protein B by Random Nylon-3 Copolymers** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*

Dohm, M. T., Mowery, B. P., Czyzewski, A. M., Stahl, S. S., Gellman, S. H., Barron, A. E.

2010; 132 (23): 7957-7967

- **Multivalent Protein Polymer MRI Contrast Agents: Controlling Relaxivity via Modulation of Amino Acid Sequence** *BIOMACROMOLECULES*

Karfeld-Sulzer, L. S., Waters, E. A., Davis, N. E., Meade, T. J., Barron, A. E.

2010; 11 (6): 1429-1436

- **Novel Peptoid Building Blocks: Synthesis of Functionalized Aromatic Helix-Inducing Submonomers** *ORGANIC LETTERS*

Seo, J., Barron, A. E., Zuckermann, R. N.

2010; 12 (3): 492-495

- **Comparing bacterial membrane interactions of antimicrobial peptides and their mimics.** *Methods in molecular biology (Clifton, N.J.)*
Chongsirawatana, N. P., Barron, A. E.
2010; 618: 171-182
- **Chemoselective and Microwave-Assisted Synthesis of Glycopeptoids** *ORGANIC LETTERS*
Seo, J., Michaelian, N., Owens, S. C., Dashner, S. T., Wong, A. J., Barron, A. E., Carrasco, M. R.
2009; 11 (22): 5210-5213
- **Soft X-ray tomography of phenotypic switching and the cellular response to antifungal peptoids in *Candida albicans*** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Uchida, M., McDermott, G., Wetzler, M., Le Gros, M. A., Myllys, M., Knoechel, C., Barron, A. E., Larabell, C. A.
2009; 106 (46): 19375-19380
- **Engineering Surfaces for Substrate-Mediated Gene Delivery Using Recombinant Proteins** *BIOMACROMOLECULES*
Rea, J. C., Gibly, R. F., Davis, N. E., Barron, A. E., Shea, L. D.
2009; 10 (10): 2779-2786
- **Size-based protein separations by microchip electrophoresis using an acid-labile surfactant as a replacement for SDS** *ELECTROPHORESIS*
Root, B. E., Zhang, B., Barron, A. E.
2009; 30 (12): 2117-2122
- **DNA migration mechanism analyses for applications in capillary and microchip electrophoresis** *ELECTROPHORESIS*
Forster, R. E., Hert, D. G., Chiesl, T. N., Fredlake, C. P., Barron, A. E.
2009; 30 (12): 2014-2024
- **Experimental and theoretical investigation of chain length and surface coverage on fouling of surface grafted polypeptoids** *BIOINTERPHASES*
Statz, A. R., Kuang, J., Ren, C., Barron, A. E., Szleifer, I., Messersmith, P. B.
2009; 4 (2): FA22-FA32
- **Synthesis and Characterization of a New Class of Cationic Protein Polymers for Multivalent Display and Biomaterial Applications** *BIOMACROMOLECULES*
Davis, N. E., Karfeld-Sulzer, L. S., Ding, S., Barron, A. E.
2009; 10 (5): 1125-1134
- **Self-assembling peptide-lipoplexes for substrate-mediated gene delivery** *ACTA BIOMATERIALIA*
Rea, J. C., Gibly, R. F., Barron, A. E., Shea, L. D.
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