



## Annelise E. Barron

Associate Professor of Bioengineering

### Bio

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#### BIO

Annelise E. Barron is the W.M. Keck Associate Professor of Bioengineering at Stanford University.

The broad theme of the Barron lab is the study and biomimicry of natural host defense peptides (antimicrobial peptides). We study the molecular biophysics and mechanisms of LL-37—a centrally important human host defense peptide—and its involvement in Alzheimer's dementia (via LL-37 dysregulation and degradation by pathogen virulence factors). Alzheimer's dementia can be caused by (or at least, accompanied by) polymicrobial cerebral infections, a phenomenon receiving renewed attention given recent discoveries. We are also working to develop biostable peptoid mimics of LL-37 as therapeutics that can combat antibiotic-resistant infections, especially cerebral infections, ear infections, and sinus / lung infections. Finally, we work to mimic lung surfactant proteins to facilitate delivery of therapeutics to the lungs, treat bacterial and viral pneumonia, or prevent or prevent ventilator-associated lung injury.

We are currently putting efforts into better understanding the pathogenic mechanisms of Covid-19, as relates to dysregulation of innate immunity; understanding why certain minority populations seem to be more strongly affected by Covid-19 infections; and developing safe therapeutic approaches to both preventing and treating severe Covid-19.

Dr. Barron is a chemical and biological engineer. She was trained in chemical engineering at the University of Washington (B.S.) and U.C. Berkeley (Ph.D., under the mentorship of Prof. Harvey W. Blanch), and was a Pharmaceutical Chemistry postdoc with Prof. Ken A. Dill (UCSF) and Dr. Ronald N. Zuckermann (Chiron Corp.). She has served on the faculty at Stanford since 2007, and prior to that, served on the Chemical & Biological Engineering faculty of Northwestern University in Evanston, IL for 10 years (1997-2007). Dr. Barron has been awarded the NIH Pioneer Award (2020), the Oskar Fischer Award (2022), the Presidential Early Career Award for Scientists & Engineers (PECASE) through NIH / NHGRI (1999), the Beckman Young Investigator Award (1999), and the Camille Dreyfus Teacher-Scholar Award (1998), 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 177 publications and a current H-index of 55 (Web of Science, All Databases), and serves on the advisory boards of several biotechnology companies. She is proud to be 1/4 Quechua (the Native American people of Bolivia), 1/4 Hispanic, 1/4 Swedish, 1/4 English, and 100% American.

#### ACADEMIC APPOINTMENTS

- Associate Professor, Bioengineering
- Member, Bio-X
- Member, SPARK at Stanford
- Member, Wu Tsai Human Performance Alliance
- Member, Stanford Cancer Institute

- Member, Wu Tsai Neurosciences Institute

## HONORS AND AWARDS

- The Oskar Fischer Prize, University of Texas, San Antonio and The James J. Truchard Foundation (July 2022)
- NIH Director's Pioneer Award—Title: Role of Innate Immune Dysregulation in the Etiology of Dementia, National Institutes of Health, Office of the Director (October 2020)
- Scientific Advisory Board member, DOE National Nanoscience Science Research Centers (NSRCs) (2020-2021)
- Chair, User Executive Committee, Department of Energy, The Molecular Foundry (Berkeley, CA) (2019-2021)
- Invited Kornis Family Lecturer in Medicinal Chemistry, University of New South Wales, Department of Chemistry, Sydney, Australia (2019)
- Invited Lecturer, Molecular Foundry, Lawrence Berkeley National Laboratory (2018)
- Invited Participant, Nobel Symposium: Amyloid: A multifaceted player in human health and disease, Stockholm, Sweden (2015)
- Nanobio Scholar, Virginia Tech (2011)
- W.M. Keck Associate Professor of Bioengineering, Stanford University (2007-present)
- Thiele Lecturer in Chemical Engineering, University of Notre Dame (2005)
- Camille Dreyfus Teacher-Scholar Award, Camille and Henry Dreyfus Foundation (2002)
- DuPont Young Professor Award, DuPont, Inc. (2002)
- Presidential Early Career Award for Scientists and Engineers, NIH/NHGRI (1999)
- Beckman Young Investigator Award, Arnold & Mabel Beckman Foundation (1998-99)
- NIH National Research Service Award (Postdoctoral Fellowship #1 F32 GM 18112), National Institutes of Health (1996)
- Dow Excellence in Teaching Award, 1994, U.C. Berkeley Department of Chemical Engineering, U.C. Berkeley (1994)
- Matheson Fellowship in Chemical Engineering, U.C. Berkeley (1994)
- University of California Minority Dissertation Year Fellowship, U.C. Berkeley (1994)
- 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)
- 1990-1993 U.C. Berkeley Chancellor's Minority Pre-doctoral Fellowship, U.C. Berkeley (1990-1993)
- H.K. Benson Chemical Engineering Tuition Scholarship, Univ. of Washington, Seattle (1989)
- University of Washington Undergraduate Merit Scholarship (two consecutive years), Univ. of Washington, Seattle (1988, 1989)
- 1986-1990 National Merit Scholar and Recipient of Associated Four-Year Scholarship, National Merit Scholarship Corporation (1986-1990)
- National Hispanic Scholar, Univ. of Washington, Seattle (1986)
- Tektronix Foundation Merit Scholarship, Univ. of Washington, Seattle (1986)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Editor, *Frontiers in Aging Neuroscience* (2021 - present)
- Associate Editor, *Nature Scientific Reports* (2018 - present)

## 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: <https://web.stanford.edu/group/barronlab/>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

According to our recent findings and those of others, innate immune responses in humans and other mammals involving infection-, injury-, or stress-related dynamic imbalances between particular, immunomodulatory 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 diabetes type II mellitus, atherosclerosis and Alzheimers dementia. All of these diseases involve dysbiosis, senescent/dystrophic cells, inflammation, and "proteopathies" or plaque accumulation; and can be complicated by infection by a variety of pathogens—bacterial, viral, and fungal.

The latter disease, Alzheimers dementia, is in need of a major breakthrough in fundamental understanding, more than almost any human disease currently under study. Of a total of 450+ clinical trials initiated by Pharma towards the development of Alzheimer's treatments over the past 16+ years, almost all of these trials have failed (save two recently: Biogen's Aduhelm, and Eisai's Leqembi, which can only slow the rate of cognitive decline by 25-30% at best, and which have significant side effects). There is no current effective pharmaceutical treatment to fully halt or reverse the development of dementia. 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 causes of death in the elderly.

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

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 research projects, to sleuth out the shared molecular biophysical and physiological bases for these emerging linkages, so that these conditions may be prevented.

(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

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### COURSES

#### 2022-23

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

#### 2021-22

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

#### 2020-21

- Advances in Biotechnology: BIOE 450, CHEMENG 450 (Spr)
- Biophysical Mechanisms of Innate Immunity: BIOE 236 (Win)
- Promoting Effective and Equitable Teaching in Bioengineering: BIOE 296 (Spr)

### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Claudi Zielke

#### Master's Program Advisor

Rucha Bhise

#### Doctoral (Program)

Nayla Abney, Aidan Cabral, John Klich, Trang Le

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

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

### Publications

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#### PUBLICATIONS

- **Pf bacteriophages hinder sputum antibiotic diffusion via electrostatic binding.** *bioRxiv : the preprint server for biology*  
Chen, Q., Cai, P., Chang, T. H., Burgener, E., Kratochvil, M. J., Gupta, A., Hargil, A., Secor, P. R., Nielsen, J. E., Barron, A. E., Milla, C., Heilshorn, S. C., Spakowitz, et al  
2024
- **The activity of antimicrobial peptoids against multidrug-resistant ocular pathogens.** *Contact lens & anterior eye : the journal of the British Contact Lens Association*  
Sara, M., Yasir, M., Kalaiselvan, P., Hui, A., Kuppusamy, R., Kumar, N., Chakraborty, S., Yu, T. T., Wong, E. H., Molchanova, N., Janssen, H., Lin, J. S., Barron, et al  
2024: 102124
- **Antiviral effect of peptoids on hepatitis B virus infection in cell culture.** *Antiviral research*  
Murayama, A., Hitomi, I., Yamada, N., Aly, H. H., Molchanova, N., Lin, J. S., Nishitsuji, H., Shimotohno, K., Muramatsu, M., Barron, A. E., Kato, T.  
2024: 105821
- **Supramolecular Peptoid Structure Strengthens Complexation with Polyacrylic Acid Microgels.** *Biomacromolecules*  
Zhao, W., Lin, J. S., Nielsen, J. E., Sørensen, K., Wadurkar, A. S., Ji, J., Barron, A. E., Nangia, S., Libera, M. R.  
2024
- **Between Good and Evil: Complexation of the Human Cathelicidin LL-37 and Nucleic Acids.** *Biophysical journal*  
Zielke, C., Nielsen, J. E., Lin, J. S., Barron, A. E.  
2023
- **Peptidomimetic Oligomers Targeting Membrane Phosphatidylserine Exhibit Broad Antiviral Activity.** *ACS infectious diseases*  
Tate, P. M., Mastrodomenico, V., Cunha, C., McClure, J., Barron, A. E., Diamond, G., Mounce, B. C., Kirshenbaum, K.

2023

- **Real-Time Monitoring of Multitarget Antimicrobial Mechanisms of Peptoids Using Label-Free Imaging with Optical Diffraction Tomography.** *Advanced science (Weinheim, Baden-Wuerttemberg, Germany)*  
Kim, M., Cheon, Y., Shin, D., Choi, J., Nielsen, J. E., Jeong, M. S., Nam, H. Y., Kim, S. H., Lund, R., Jenssen, H., Barron, A. E., Lee, S., Seo, et al  
2023: e2302483
- **The anti-inflammatory effects of photobiomodulation are mediated by cytokines: Evidence from a mouse model of inflammation.** *Frontiers in neuroscience*  
Shamloo, S., Defensor, E., Ciari, P., Ogawa, G., Vidano, L., Lin, J. S., Fortkort, J. A., Shamloo, M., Barron, A. E.  
2023; 17: 1150156
- **Membrane-acting biomimetic peptoids against visceral leishmaniasis.** *FEBS open bio*  
Kumar, V., Lin, J. S., Molchanova, N., Fortkort, J. A., Reckmann, C., Brase, S., Jenssen, H., Barron, A. E., Chugh, A.  
2023
- **Peptoid-Loaded Microgels Self-Defensively Inhibit Staphylococcal Colonization of Titanium in a Model of Operating-Room Contamination** *ADVANCED MATERIALS INTERFACES*  
Zhao, W., Wang, H., Xiao, X., De Stefano, L., Katz, J., Lin, J. S., Barron, A. E., Schaer, T. P., Wang, H., Libera, M.  
2022
- **Anti-persister and Anti-biofilm Activity of Self-Assembled Antimicrobial Peptoid Ellipsoidal Micelles.** *ACS infectious diseases*  
Lin, J. S., Bekale, L. A., Molchanova, N., Nielsen, J. E., Wright, M., Bacacao, B., Diamond, G., Jenssen, H., Santa Maria, P. L., Barron, A. E.  
2022
- **Monitoring multi-target mechanism of antimicrobial peptoids using real-time and label-free imaging with optical diffraction tomography**  
Kim, M., Cheon, Y., Shin, D., Choi, J., Nielsen, J., Jeong, M., Lund, R., Jenssen, H., Barron, A. E., Lee, S., Seo, J.  
WILEY.2022
- **Broad-spectrum CRISPR-mediated inhibition of SARS-CoV-2 variants and endemic coronaviruses in vitro.** *Nature communications*  
Zeng, L., Liu, Y., Nguyenla, X. H., Abbott, T. R., Han, M., Zhu, Y., Chemparathy, A., Lin, X., Chen, X., Wang, H., Rane, D. A., Spatz, J. M., Jain, et al  
2022; 13 (1): 2766
- **Efficacy of Cathelicidin-Mimetic Antimicrobial Peptoids against Staphylococcus aureus.** *Microbiology spectrum*  
Benjamin, A. B., Moule, M. G., Didwania, M. K., Hardy, J., Saenkham-Huntsinger, P., Sule, P., Nielsen, J. E., Lin, J. S., Contag, C. H., Barron, A. E., Cirillo, J. D.  
2022: e0053422
- **Self-Assembly of Antimicrobial Peptoids Impacts Their Biological Effects on ESKAPE Bacterial Pathogens.** *ACS infectious diseases*  
Nielsen, J. E., Alford, M. A., Yung, D. B., Molchanova, N., Fortkort, J. A., Lin, J. S., Diamond, G., Hancock, R. E., Jenssen, H., Pletzer, D., Lund, R., Barron, A. E.  
2022
- **Upregulating Human Cathelicidin Antimicrobial Peptide LL-37 Expression May Prevent Severe COVID-19 Inflammatory Responses and Reduce Microthrombosis** *Frontiers in Immunology*  
Aloul, K. M., Nielsen, J. E., Defensor, E. B., Lin, J. S., Fortkort, J. A., Shamloo, M., Cirillo, J. D., Gombart, A. F., Barron, A. E.  
2022; 13: 1-16
- **Hyperactivation of monocytes and macrophages in MCI patients contributes to the progression of Alzheimer's disease.** *Immunity & ageing : I & A*  
Munawara, U., Catanzaro, M., Xu, W., Tan, C., Hirokawa, K., Bosco, N., Dumoulin, D., Khalil, A., Larbi, A., Levesque, S., Ramassamy, C., Barron, A. E., Cunnane, et al  
2021; 18 (1): 29
- **Potent Antiviral Activity against HSV-1 and SARS-CoV-2 by Antimicrobial Peptoids** *Pharmaceuticals*  
Diamond, G., Molchanova, N., Herlan, C., Fortkort, J. A., Lin, J. S., Figgins, E., Bopp, N., Ryan, L. K., Chung, D., Adcock, R. S., Sherman, M., Barron, A. E.  
2021; 14 (4): 304
- **Targeting Impaired Antimicrobial Immunity in the Brain for the Treatment of Alzheimer's Disease** *NEUROPSYCHIATRIC DISEASE AND TREATMENT*  
Fulop, T., Tripathi, S., Rodrigues, S., Desroches, M., Bunt, T., Eiser, A., Bernier, F., Beauregard, P. B., Barron, A. E., Khalil, A., Plotka, A., Hirokawa, K., Larbi, et al  
2021; 17: 1311–39
- **The human cathelicidin LL-37 is a nanomolar inhibitor of amyloid self-assembly of islet amyloid polypeptide (IAPP).** *Angewandte Chemie (International ed. in English)*

Armiento, V., Hille, K., Naltsas, D., Lin, J. S., Barron, A. E., Kapurniotu, A.  
2020

- **Optimizing Exogenous Surfactant as a Pulmonary Delivery Vehicle for Chicken Cathelicidin-2.** *Scientific reports*  
Baer, B. n., Veldhuizen, E. J., Molchanova, N. n., Jekhmane, S. n., Weingarh, M. n., Jenssen, H. n., Lin, J. S., Barron, A. E., Yamashita, C. n., Veldhuizen, R. n.  
2020; 10 (1): 9392
- **Halogenation as a tool to tune antimicrobial activity of peptoids.** *Scientific reports*  
Molchanova, N. n., Nielsen, J. E., Sørensen, K. B., Prabhala, B. K., Hansen, P. R., Lund, R. n., Barron, A. E., Jenssen, H. n.  
2020; 10 (1): 14805
- **Targeting Infectious Agents as a Therapeutic Strategy in Alzheimer's Disease** *CNS Drugs*  
Fülöp, T., Munawara, U., Larbi, A., Desroches, M., Rodrigues, S., Catanzaro, M., Guidolin, A., Khalil, A., Bernier, F., Barron, A. E., Hirokawa, K., Beauregard, P. B., Dumoulin, et al  
2020: 23
- **Surface Tension Reduction by Peptoid-Based Exogenous Surfactants**  
Veldhuizen, R., Xu, W., Molchanova, N., Baer, B., Lin, J., McCaig, L., Barron, A.  
AMER THORACIC SOC.2020
- **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)
- **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
- **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
- **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
- **Evidence that the Human Innate Immune Peptide LL-37 May Be a Binding Partner of Abeta 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. n., Kang, D. n., Choi, J. n., Huang, W. n., Wadman, M. n., Barron, A. E., Seo, J. n.  
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. n., Suh, G. n., Blackwell, H. E., Barron, A. E., Bollyky, P. L., Goodman, S. B., Amanatullah, D. F.  
2018
- **Intracellular biomass flocculation as a key mechanism of rapid bacterial killing by cationic, amphipathic antimicrobial peptides and peptoids.** *Scientific reports*  
Chongsirawatana, N. P., Lin, J. S., Kapoor, R. n., Wetzler, M. n., 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- $\beta$  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
- **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
- **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)
- **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)
- **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
- **Simultaneous detection of 19 K-ras mutations by free-solution conjugate electrophoresis of ligase detection reaction products on glass microchips** *ELECTROPHORESIS*  
Albrecht, J. C., Kotani, A., Lin, J. S., Soper, S. A., Barron, A. E.  
2013; 34 (4): 590-597
- **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
- **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

- **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
- **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
- **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
- **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
- **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
- **Synthesis and Assembly of Functional High Molecular Weight Adiponectin Multimers in an Engineered Strain of Escherichia coil** *BIOMACROMOLECULES*  
Ding, S., Pinkas, D. M., Barron, A. E.  
2012; 13 (4): 1035-1042
- **Quantitative experimental determination of primer-dimer formation risk by free-solution conjugate electrophoresis** *ELECTROPHORESIS*  
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