

Curriculum vitae

Lane A. Baker

Professor, James F. Jackson Chair

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Academic Career

2018 Professor, Indiana University, Department of Chemistry, Bloomington, Indiana, USA
2014 James F. Jackson Chair
 Department of Chemistry, Bloomington, Indiana, USA
2012 Associate Professor, Indiana University, Department of Chemistry, Bloomington, Indiana, USA
2006 - 2012 Assistant Professor, Indiana University, Department of Chemistry, Bloomington, Indiana, USA
2004-2006 Postdoctoral Associate, University of Florida, Gainesville, Florida, USA
 Supervisor: Charles R. Martin
2001-2004 National Research Council Postdoctoral Associate, Naval Research Laboratory, Washington, D.C., USA
 Supervisor: Lloyd J. Whitman
2001 Ph.D. Texas A&M University, College Station, TX, USA
 Supervisor: Richard M. Crooks
1996 B.S. Missouri State University, Springfield, MO, USA
 Research Advisor: Shujun Su

Honors, Awards, and Appointments

2021 Fellow, American Chemical Society
2021 Award in Electrochemistry, Division of Analytical Chemistry, American Chemical Society
2021 NSF Special Creativity Award
2019-2021 Site Director, NSF I/U CRC Center for Bioanalytic Metrology
2019 Chair American Chemical Society Division of Analytical Chemistry
2019 Analytical Scientists Power List (Top 100)
2019 Hach Lecture, University of Wyoming
2017 Trustee's Teaching Award Indiana University
2015-2017 Associate Editor, *RSC Advances*
2014 Fellow, Royal Society of Chemistry
2012 Young Investigator Award, Society for Electroanalytical Chemistry
2009 Cottrell Scholar Award, Research Corporation for Science Advancement
2009 CAREER Award, National Science Foundation
2008 Starter Grant Awardee, Society of Analytical Chemists of Pittsburgh
2001 National Research Council Postdoctoral Associate, Naval Research Laboratory
2001 Celanese Outstanding Graduate Student, Texas A&M University

1996 Hyperchem Hypercube Scholar, Missouri State University
1996 Outstanding Undergraduate in Inorganic Chemistry, Missouri State University

Lane Baker was educated at Missouri State University, Springfield, MO (BS Chem 1996) and Texas A&M University (Ph.D. 2001) working with Richard M. Crooks. He joined the group of Lloyd J. Whitman (2001) in the Surface Nanoscience and Sensor Technology Section of the Naval Research Laboratory as a National Research Council Postdoctoral Associate, conducting research on atomically resolved scanned probe microscopies. He then joined the group of Charles R. Martin (2004) at the University of Florida as a Postdoctoral Associate investigating polymeric nanopores for sensing and separations. He started as an Assistant Professor at Indiana University in the Analytical Chemistry Division (2006) and was promoted to Associate Professor with tenure in 2012. His research group is interested in three areas. (i) Transient and spatial measurement of ion concentrations with scanned probe microscopies. (ii) Electrospray from nanoscale pipettes. (iii) Electrochemistry in small domains.

Current Collaborations

Chandan Sen (IUSM), Paul Bohn (Notre Dame), Garth Simpson (Purdue), Dana Spence (Michigan State University), Scott Martin (Saint Louis University), Zuzanna Siwy (UC-Irvine), Craig Aspinwall (University of Arizona), Tom Snaddon (Indiana University), Xingchen Ye (Indiana University)

Current and Past Group Members

Visiting Faculty: Prof. Chengxiao Zhang (2016, Director, Key Laboratory of Analytical Chemistry for Life Science of Shanxi Province, China), Prof. Wookyoung Lee (2010-2012, Inje, Korea)

Postdoctoral: Dr. Srinivas Beeram (2011-2012), Dr. Jeremy Wilburn (2010-2011), Dr. Yaqin Fu (2006-2009), Dr. Vish Bhakthavatsalam (2007-2008)

Graduate (13 PhD; 5 MS; 12 current): Kaixiang Huang, Natasha Siepser, Gargi Jagdale, Brian Choi, Sasha Alden, Kristen Alanis, Charles Ault, Cody Leasor, Yunong Wang, Lingjie Zhang, Ana Cuoto (DGP), Ben Gerroll (DGP), Cheng Zhu (PhD 2021), Tyler Yarger (MS 2020), Alicia Friedman (PhD 2018), Elizabeth Yuill (PhD 2017), Lushan Zhou (PhD 2017), Yuhuan Zeng (MS 2017), Wenqing Shi (PhD 2017), Anna Weber (MS 2017), Anumita Saha, (PhD 2016), Yi Zhou (PhD 2014), Kirstin Morton (PhD 2014), Maks Derylo (MS 2014), Niya Sa (PhD 2013), Celeste Morris (PhD 2013), Rahul Thakar (PhD 2013), Rashid Zakeri (MS 2013), Joseph Basore (PhD 2013), Chiao-Chen Chen (PhD, 2012)

Visiting Scholars: Na Zhang (2014)

Undergraduate: Jacqueline Patterson (2018-2019), Jon-Luc Poirier (2017), Huidi Chen (2017), Curtis Green (2015), David Abrahams (2014), Kayla Matthews (2012), Andrew Rusch (2012), Doug Miller (2010), Kyuwon Kim (2008), Ryan Kapp (2008), Carrie VanLue (2007)

Editorial

2019-present *Encyclopedia of Electroanalytical Chemistry*, Section Editor

2019-present *Analytical and Bioanalytical Chemistry*, Advisory Board

2019-present *Nanoscientific (Park Instruments)*, Editorial Board

2018-present *Journal of the Electrochemical Society*, Editorial Advisory Committee

2013-present *Analytical Methods*, Editorial Advisory Board

- 2017-present *ACS Sensors*, Editorial Advisory Board
 2021 *Journal of the Electrochemical Society*, Society for Electroanalytical Chemistry Members Special Issue, co-Editor (with Bo Zhang, Francis Zamborini and Lanqun Mao)
 2019 *ChemElectroChem*, Richard M. Crooks Festschrift, co-Editor (with Francis Zamborini, Wei Zhan, and Robbyn Anand)
 2017, 2019 *Analytical Chemistry*, Editorial Advisory Board (ex-officio)
 2018 *ChemElectroChem*, co-Editor (with Yitao Long and Patrick Unwin), Special Issue on Single-Entity Electrochemistry
 2015-17 *RSC Advances*, Associate Editor
 2015 *Analytical Methods*, co-Editor (with Ryan Bailey) Emerging Investigators Issue
 2011-14 *Analytical Chemistry*, Features Advisory Panel

Organizations/Societies

American Chemical Society, Society for Electroanalytical Chemistry, The Electrochemical Society, International Society of Electrochemistry, American Society for Mass Spectrometry, American Associate for the Advancement of Science

Outreach and Synergistic Activities

- 2023 Founding Organizer and Vice-Chair, Gordon Conference on Chemical Imaging, Manchester, NH
 2020-present Founder and Organizer, Society for Electroanalytical Chemistry Student Group Meeting
 2020-present Organizing Committee, Analytical Sciences Digital Library Remote Labs and Simulations
 2018-present SENTINEL-ITN, EU Horizon 2020, Member of International Partner Network
 2020 NSF Chemistry Division Review, Committee of Visitors
 2020 Past-Chair, American Chemical Society Division of Analytical Chemistry
 2019 Chair, American Chemical Society Division of Analytical Chemistry
 2018 Program Chair, American Chemical Society Division of Analytical Chemistry
 2018 Organizing Committee RSC Faraday Discussion on Nanoscale Electrochemistry, Bath, UK
 2015-18 Chair Membership Committee, Society for Electroanalytical Chemistry
 2017 Chair-Elect American Chemical Society Division of Analytical Chemistry
 2015-17 co-Chair, American Chemical Society Division of Analytical Chemistry, Spring and Fall Meetings
 2015-16 co-Chair, Long Range Program Planning Committee American Chemical Society, Division of Analytical Chemistry
 2014 Fellow, Royal Society of Chemistry
 2014 Discussion Leader, Gordon Research Conference on Electrochemistry, Ventura, CA
 2012-14 Organizing Committee and Facilitator, 1st-3rd Cottrell Scholar's Collaborative New Faculty in Chemistry Workshop, Washington, DC
 2013-18 Board of Directors of Society for Electroanalytical Chemistry
 2011-12 First and Second China-US Analytical Chemistry Workshop, Tsinghua University, Beijing, China

2010 Hosted and Organized Boy Scout Merit Badge Event at Indiana University
2008 Midwest Analytical Universities Chemistry Conference, Indiana University,
Bloomington Indiana Meeting Organizer (with Stephen Jacobson)

Invited Seminar Presentations

103. Pittcon 2022 (March 2022)
102. Florida State University, Tallahassee, FL (2021)
101. Royal Society of Chemistry, Faraday Discussion Next Generation Nanoelectrochemistry, (Virtual, Fall 2021)
100. Midwest Regional Meeting of the American Chemical Society, Springfield, MO (October 2021)
99. University of North Carolina (Virtual, October 2021)
98. SENTINEL Workshop, Rimini, Italy (September 2021)
97. Fall National Meeting of the American Chemical Society, Atlanta, GA (August 2021)
96. Northwest Regional Meeting of the American Chemical Society (Virtual 2021)
95. Texas A&M University, College Station, TX (Virtual, April 2021)
94. Pittcon 2021 (Virtual, March 2021)
93. Clarkson University, Potsdam, NY (Virtual, November 2020)
92. Wayne State University, Detroit, MI (Virtual, November 2020)
91. University of Rhode Island, South Kingston, RI (Virtual, October 2020)
90. Montclair State University, Montclair, NJ (Virtual, October 2020)
89. Colorado State University, Fort Collins, CO (February 2020)
88. University of Miami, Miami, OH (February 2020)
88. Nanoscientific Symposium, Albany, NY (November 2019)
87. University of Texas, El Paso, TX (October 2019)
87. Potter's Lodge Meeting, Blue Mountain Lake, NY (September 2019)
86. Mátrafüred Conference, Visegrád, Hungary (June 2019)
86. 235th Electrochemical Society Meeting, Dallas, TX (May 2019)
85. Missouri State University, Springfield, MO (April 2019)
84. Hach Lecture, University of Wyoming, Laramie, WY (March 2019)
83. East Tennessee State University (February 2019)
82. Purdue University, West Lafayette, IN (February 2019)
81. University of Akron, Akron, OH (February 2019)
80. SciX 2018, Atlanta, GA (October 2018)
79. University of Puerto Rico (September 2018)
78. 69th International Society of Electrochemistry Meeting, Bologna Italy (August 2018)
77. 254th National American Chemical Society, Boston, MA (August 2018)
76. Pittcon 2018, Orlando, FL (March 2018)
75. Gordon Research Conference on Electrochemistry, Ventura, CA (January 2018)
74. Potter's Lodge Meeting, Blue Mountain Lake, NY (September 2017)
73. German Society of Biochemistry and Molecular Biology Satellite Meeting: Novel tools to investigate cellular physiology at the nanoscale, Ruhr-Bochum, Germany (October 2017)
72. SciX 2017, Reno, NV (October 2017)
71. 254th National American Chemical Society, Washington, DC (August 2017)
70. University of Texas, Austin, TX (May 2017)
69. Pittcon 2017, Chicago, IL (March 2017)

68. University of Arizona, Tucson, AZ (February 2017)
67. University of Utah, Salt Lake City, UT (October 2016)
66. Royal Society of Chemistry Faraday Discussion Single-Entity Electrochemistry, York, UK (September 2016)
65. International Society of Electrochemistry, 67th Annual Meeting, The Hague, Netherlands (August 2016)
64. 252nd National American Chemical Society Meeting, Philadelphia, PA (August 2016)
63. Fourth China-US Analytical Chemistry Workshop, Xiamen, China (June 2016)
62. CERMACS, Bill Heineman Symposium, Cincinnati, OH (May 2016)
61. 251st National American Chemical Society Meeting, San Diego, CA (March 2016)
61. Reilly Award Symposium, Pittcon 2016, Atlanta, GA (March 2016)
60. Pittcon 2016, Atlanta, GA (March 2016)
59. ICAISE, Indianapolis, IN (October 2016)
58. Pacifichem, Honolulu, HI (December 2015)
57. Case Western Reserve University, Cleveland, OH (November 2014)
56. Center for Analytical Instrument Development Workshop, 7th Annual Meeting, Purdue University, West Lafayette, IN (September 2014)
55. International Society of Electrochemistry, 65th Annual Meeting, Lausanne, Switzerland (September 2014)
54. Chalmers University of Technology, Area of Advance Nanoscience and Nanotechnology Workshop, Gothenburg, Sweden (June 2014)
53. Argonne National Laboratory, Chicago, IL (June 2014)
52. University of Pittsburgh, Pittsburgh, PA (April 2014)
51. University of Maryland-Baltimore County, Baltimore, MD (February 2014)
50. SciX, Milwaukee, WI (October 2013)
49. Watanabe Symposium, Indiana University, Bloomington, IN (October 2013)
48. Potter's Lodge Meeting, Blue Mountain Lake, NY (September 2013)
47. City University of New York, New York, NY (April 2013)
46. Pittcon 2013, Philadelphia PA (March 2013)
45. University of California-Irvine, Irvine, CA (December 2012)
44. University of Minnesota, Minneapolis, MN (October 2012)
43. SciX, Kansas City, MO (October 2012)
43. Second China-US Analytical Chemistry Workshop, Tsinghua University, Beijing, China, (September 2012)
42. Texas A&M University, College Station, TX (September 2012)
41. Gordon Research Conference on Biosensors (July 2012)
40. Cottrell Scholar's Conference, Tucson, AZ (July 2012)
39. Reilly Award Symposium, Pittcon 2012, Orlando, FL (March 2012)
38. Southwest Regional American Chemical Society Meeting, Austin, TX (November 2011)
37. University of Notre Dame, Notre Dame, IN (October 2011)
36. Texas Tech, Lubbock, TX (September 2011)
35. Potter's Lodge Meeting, Blue Mountain Lake, NY (September 2011)
34. Cottrell Scholar's Conference, Tucson, AZ (July 2011)
33. University of Washington, Seattle, WA (May 2011)
32. Kansas State University, Manhattan, KS (May 2011)
31. University of Kansas, Lawrence, KS (May 2011)

30. University of North Carolina, Chapel Hill, NC (April 2011)
29. Scanning Ion Conductance Microscopy Workshop, London, UK (March 2011)
28. Pittcon 2011, Atlanta, GA (March 2011)
27. University of Illinois, Urbana, IL (February 2011)
26. Pacifichem 2010, Honolulu, HI (December 2010)
25. Purdue University, West Lafayette, IN (November 2010)
24. University of Texas, Austin, TX (November 2010)
23. Texas A&M University, College Station, TX (November 2010)
22. St. Louis University, St. Louis, MO (September 2010)
21. Georgia State University, Atlanta, GA (April 2010)
20. University of Florida, Gainesville, FL (April 2010)
19. Michigan State University, East Lansing, MI (March 2010)
18. Optical Society of America 93rd Annual Meeting, San Jose, CA (October 2009)
17. Potter's Lodge Meeting, Blue Mountain Lake, NY (September 2009)
16. University of Louisville, Louisville, KY (April 2009)
15. Northern Kentucky University, Highland Heights, KY (April 2009)
14. Pittcon 2009, Chicago, IL (March 2009)
13. IUPUI, Indianapolis, IN (February 2009)
12. Lab Automation 2009, Palm Springs, CA (January 2009)
11. Southern Illinois University, Carbondale, IL (November 2008)
10. Rose-Hulman Institute of Technology, Terre Haute, IN (October 2008)
9. Valparaiso University, Valparaiso, IN (September 2008)
8. 20th International Conference on Accelerators, Fort Worth, TX (August 2008)
7. HPLC2008, Baltimore, MD (May 2008)
6. Wright State University, Dayton, OH (February 2008)
5. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan (December 2007)
4. Eastern Kentucky University, Richmond, KY (December 2007)
3. Western Kentucky University, Bowling Green, KY (November 2007)
2. Benedictine College, Atchison, KS (November 2007)
1. Indiana State University, Terre Haute, IN (April 2007)

Arranged and Contributed Seminars

37. 260th National American Chemical Society Meeting, San Francisco, CA (September 2019)
36. Midwest Universities Analytical Chemistry Conference, Michigan State University, East Lansing, MI (November 2018)
35. International Society for Electrochemistry Meeting, Providence, RI (August 2017)
34. 253rd National American Chemical Society Meeting, San Francisco, CA (March 2016)
33. Midwest Universities Analytical Chemistry Conference, University of Illinois, Urbana-Champaign, IL (October 2016)
32. Midwest Universities Analytical Chemistry Conference, University of Minnesota, Minneapolis, MN (October 2015)
31. Pittcon 2013, Philadelphia, PA (March 2013)
30. Midwest Universities Analytical Chemistry Conference, University of Wisconsin, Madison, WI (September 2012)

29. Center for Analytical Instrumentation Development Annual Meeting, West Lafayette, IN (May 2011)
28. 218th Electrochemical Society Meeting, Las Vegas, NV (October 2010)
27. Midwest Universities Analytical Chemistry Conference, Purdue University, West Lafayette, IN (October 2010)
26. Midwest Universities Analytical Chemistry Conference, Michigan State University, East Lansing, MI (December 2009)
25. Pittcon 2008, New Orleans, LA (March 2008)
24. Midwest Universities Analytical Chemistry Conference, University of Illinois, Urbana, IL (November 2007)
23. University of Kansas, Lawrence, KS (February 2006)
22. The Ohio State University, Columbus, OH (February 2006)
21. Virginia Polytechnic Institute, Blacksburg, VA (January 2006)
20. Indiana University, Bloomington, IN (January 2006)
19. Florida State University, Tallahassee, FL (January 2006)
18. University of California, Riverside, CA (December 2005)
17. University of Massachusetts, Amherst, MA (December 2005)
16. University of Delaware, Newark, DE (December 2005)
15. University of Florida, Gainesville, FL (December 2005)
14. University of Texas, Austin, TX (November 2005)
13. Rensselaer Polytechnic Institute, Troy, NY (November 2005)
12. Auburn University, Auburn, AL (November 2005)
11. Wayne State University, Detroit, MI (November 2005)
10. University of Kentucky, Lexington, KY (October 2005)
9. 230th National American Chemical Society Meeting in the Analytical Chemistry Division; Washington, DC (August 2005)
8. 229th National American Chemical Society Meeting in the Colloid and Surface Chemistry Division, San Diego, CA (March 2005)
7. Pittcon 2005, Orlando, FL (March 2005)
6. AVS 50th International Symposium, Baltimore, MD (November 2003)
5. 226th National American Chemical Society Meeting in the Colloid and Surface Chemistry Division, New York, NY (September 2003)
4. 2003 Physical Electronics Conference, Ithaca, NY (June 2003)
3. 221st National American Chemical Society Meeting in the Polymer Materials Science and Engineering Division, San Diego, CA (April 2001)
2. Missouri State University, Springfield, MO (October 1999)
1. 218th National American Chemical Society Meeting in the Organic Chemistry Division, New Orleans, LA (August 1999)

Poster Presentations

Faraday Discussion: Nanoscale Interfaces, Bath, UK (June 2018), 250th National American Chemical Society Meeting, Boston, MA (August 2015); Gordon Research Conference on Electrochemistry, Ventura, CA (January 2010); Gordon Research Conference on Cell Contact and Adhesion, Waterville, NH (June 2009); Pittcon 2006, Orlando, FL (March 2006); 230th National American Chemical Society Meeting, Washington, DC (August 2005); 215th National American Chemical Society Meeting in the Colloid and Surface Chemistry Division; Dallas, TX (March

1998); Midwest Regional ACS Meeting in the Physical Chemistry Division; Joplin, MO (March 1996).

Departmental/University Service

2020-2021 Graduate Recruiting Chair
2012-21 Faculty Advisor for Student Electrochemical Society Chapter
2015-21 Chemistry Department Analytical Area Coordinator
2014-16, 2020-21 Chemistry Department Diversity Affairs Committee
2017-19 Associate Chair, Department of Chemistry
2016-19 Chemistry Department Policy Committee
2015-18 Quantitative Chemical Biology (NIH Training Grant) Curriculum Committee
2016 Faculty Search Committee Precision Medicine Initiative, Chemistry Pillar
2016 Chair, Departmental External Review Committee
2014-16 Chemistry Department Graduate Standards Committee
2013-15 College Academic Fairness Committee (Arts and Science)
2014 Gill Center review
2009-12 NOBCChe Faculty Advisor
2012 College Evaluation Committee for WISE and Herbert Fellowships
2012 Chemistry Website Redesign Committee
2012 Analytical/Bioanalytical Faculty Search Committee
2009-12 Graduate Recruiting Analytical Division
2008 Graduate Recruiting Materials Division

Teaching

4846 Students Total

(Semester, *Course*, Student Enrollment)

F2020 *C611: Electroanalytical Chemistry*, 11
S2020 *C611: Electroanalytical Chemistry*, 11
F2018 *A315: Chemical Measurements Laboratory*, 24
F2017 *C127:Principles of Chemistry and Biochemistry Laboratory*, 599
S2017 *C127:Principles of Chemistry and Biochemistry Laboratory*, 576
F2016 *C127:Principles of Chemistry and Biochemistry Laboratory*, 574
S2016 *C611:Electroanalytical Chemistry*, 7
F2015 *A315:Chemical Measurements Laboratory*, 20
S2015 *C611:Electroanalytical Chemistry*, 12
F2014 *A315:Chemical Measurements Laboratory*, 34
SU2014 *C127:Principles of Chemistry and Biochemistry Laboratory*, 49
S2014 *A800:Analytical Chemistry Research Seminar*, 13
S2014 *C620:Chemical Measurements* 20
F2013 *A315:Chemical Measurements Laboratory*, 17
F2013 *A800:Analytical Chemistry Research Seminar*, 8
F2013 *C689 Quantitative Chemical Biology Journal Club*, 6
S2013 *C117:Principles of Chemistry and Biochemistry Laboratory*, 640
S2013 *M608:Materials Chemistry*, 12
F2012 *A315:Chemical Measurements Laboratory*, 13
S2012 *M608:Materials Chemistry*, 9

- F2011 C611:Electroanalytical Chemistry, 20
 S2011 A800:Analytical Chemistry Research Seminar, 20
 F2010 A315:Chemical Measurements Laboratory, 12
 F2010 A800:Analytical Chemistry Research Seminar, 20
 S2010 C611:Electroanalytical Chemistry, 20
 F2009 C117:Principles of Chemistry and Biochemistry, 572
 S2009 C117:Principles of Chemistry and Biochemistry Laboratory, 473
 F2008 C117:Principles of Chemistry and Biochemistry, 572
 S2008 C117:Principles of Chemistry and Biochemistry Laboratory, 473
 F2007 C611:Electroanalytical Chemistry, 20
 F2006 A315:Chemical Measurements Laboratory, 12

Publications

124. Alanis, K.; Alden, S.E.; Baker, L.A.; Shen, M. Micro and Nanopipettes for Electrochemical Imaging and Measurement, in *Scanning Electrochemical Microscopy Third Edition*; Mirkin, M.V., Bard, A.J., Eds.; CRC Press: Boca Raton, FL, **2021**, *submitted*.
123. McKenzie, E.; Hosseini, A.; Couto Petro, A.G.; Gerroll, B.; Rudman, K.; Baker, L.A.; Little, R.D. Versatile Tools for Understanding Synthetic Mechanisms, **2021**, *Chem. Rev.*, (*invited*) *submitted*.
122. Choi, M.; Leasor, C.W.; Baker, L.A. Analytical Applications of Scanning Ion Conductance Microscopy: Measuring Ions and Electrons, in *Scanning Ion Conductance Microscopy*; Schäffer, T.E., Eds.; Springer Nature: Switzerland, **2021**, *accepted*.
121. Zhu, C.; Jagdale, G.; Gandolfo, A.; Abney, R.; Zhou, L.; Bish, D.; Raff, J.D.; Baker, L.A. Surface Charge Measurements with Scanning Ion Conductance Microscopy Provides Insights into Nitrous Acid Speciation at the Kaolin Mineral-Air Interface, *Enviro. Sci. Tech.*, **2021**, *accepted*.
120. Huang, K.; Castiaux, A.; Podicheti, R.; Rusch, D.B.; Martin, R.S.; Baker, L.A. A Hybrid Nanofiber/Paper Cell Culture Platform for Building a 3D Blood-brain Barrier Model, *Small Methods*, **2021**, *accepted*.
119. Khona, D.K.; Roy, S.; Ghatak, S.; Huang, K.; Jagdale, G.; Baker, L.A.; Sen, C.K. Ketoconazole Resistant *Candida albicans* is Sensitive to a Wireless Electroceutical Wound Care Dressing, *Bioelectrochem.*, **2021**, *accepted*. (<https://doi.org/10.1016/j.bioelechem.2021.107921>)
118. Couto Petro, A.G.; Scherschel, N.F.; Baker, L.A. Electroreduction of Acetochlor at Silver Cathodes in Aqueous Media, *J. Electrochem. Soc.* **2021**, *168*, 075502. (<https://doi.org/10.1149/1945-7111/ac13d6>)
117. Friedman, A.K.; Boeynaems, S.; Baker, L.A. Synthetic hydrogel mimics of the nuclear pore complex for the study of nucleocytoplasmic transport defects in C9orf72 ALS/FTD, *Anal. Bioanal. Chem.* **2021**, *accepted*. (<https://dx.doi.org/10.1007/s00216-021-03478-2>)
116. Choi, M.; Siepser, N.P.; Jeong, S.; Ye, X.; Baker, L.A. Characterization of Ligand Adsorption at Individual Gold Nanocubes, *Langmuir* **2021**, *37*, 7701-7711. (<https://doi.org/10.1021/acs.langmuir.1c00694>)
115. Zhu, C.; Huang, K.; Wang, Y.; Alanis, K.; Shi, W.; Baker, L.A. Imaging with Ion Channels, *Anal. Chem.*, **2021**, *93*, 5355-5359. (<https://doi.org/10.1021/acs.analchem.1c00224>)

114. Zhu, C.; Huang, K.; Siepser, N.P.; Baker, L.A. Scanning Ion Conductance Microscopy (SICM) *Chem. Rev.*, **2020**, *in press*. (<https://doi.org/10.1021/acs.chemrev.0c00962>)
113. Couto Petro, A.G.; Thapa, B.; Karty, J.A.; Raghavachari, K.; Baker, L.A.; Peters, D.G. Direct Electrochemical Reduction of Acetochlor at Carbon and Silver Cathodes in Dimethylformamide, *J. Electrochem. Soc.*, **2020**, *167*, 155517. (<https://dx.doi.org/10.1149/1945-7111/abb8f9>)
112. Baker, L.A.; Cavinato, A.G. Teaching Analytical Chemistry in the time of COVID-19 (Invited Editorial) *Anal. Chem.* **2020**, *92*, 10185–10186. (<https://doi.org/10.1021/acs.analchem.0c02981>)
111. Lucas, R.A.; Lin, C.; Baker, L.A.; Siwy, Z.S. Ionic Amplifying Circuits Inspired by Electronics and Biology, *Nat. Commun.*, **2020**, *11*, 1568. (<https://dx.doi.org/10.1038/S41467-020-15398-3>)
110. Choi, M.; Siepser, N.P.; Jeong, S.; Wang, Y.; Jagdale, G.; Ye, X.; Baker, L.A. Probing Single-Particle Electrocatalytic Activity at Facet-Controlled Gold Nanocrystals, *Nanoletters*, **2020**, *20*, 1233-1239. (<https://dx.doi.org/10.1021/acs.nanolett.9b04640>)
109. Panczyk, E.M.; Gilbert, J.D.; Jagdale, G.S.; Stiving, A.Q.; Baker, L.A.; Wysocki, V.H. Ion Mobility and Surface Collisions Show that Submicron Capillaries Can Produce Native-like Protein Complexes, *Anal. Chem.*, **2020**, *92*, 2460-2467. (<http://dx.doi.org/10.1021/acs.analchem.9b03666>)
108. Alden, S.E.; Siepser, N.P.; Patterson, J.A.; Jagdale, G.S.; Choi, M.; Baker, L.A. Array Microcell Method (AMCM) for Serial Electroanalysis, *ChemElectroChem*, **2020**, *7*, 1084-1091. (<https://doi.org/10.1002/celec.201901976>)
107. Anand, R.; Baker, L. A.; Sun, L.; Zamborini, F. P.; Zhan, W. A Tribute to Richard M. Crooks on the Occasion of His 65th Birthday, *ChemElectroChem*, **2020**, *7*, 1062-1066. (<https://doi.org/10.1002/celec.201901630>)
106. Huang, K.; Zhou, L.; Alanis, K.; Hou, J.; Baker, L.A. Imaging effects of hyperosmolality on individual tricellular junctions, *Chem. Sci.*, **2020**, *11*, 1307-1315. (<http://dx.doi.org/10.1039/C9SC05114G>)
105. Baker, L.A.; Jagdale, G. On the Interface of Electrochemistry and Mass Spectrometry, *Curr. Opin. Electrochem.*, **2019**, *13*, 140-146. (<https://doi.org/10.1016/j.coelec.2018.12.001>)
104. Baker, L.A. A Perspective and Prospectus on Single Entity Electrochemistry, *J. Am. Chem. Soc.*, **2018**, *140*, 15549-15559. (<https://dx.doi.org/10.1021/jacs.8b09747>)
103. Choi, M.; Baker, L.A. Biphasic Scanning Ion Conductance Microscopy, *Anal. Chem.*, **2018**, *90I*, 11797-11801. (<https://dx.doi.org/10.1021/acs.analchem.8b03660>)
102. Long, Y.; Unwin, P.R.; Baker, L.A. Single-Entity Electrochemistry: Fundamentals and Applications (editorial), *ChemElectroChem*, **2018**, *5*, 2918-2919. (<https://doi.org/10.1002/celec.201801169>)
101. Zhu, C.; Zhou, L.; Baker, L.A. Mapping Surface Charge of Individual Microdomains with Scanning Ion Conductance Microscopy, *ChemElectroChem*, **2018**, *5*, 2986-2990. (<https://doi.org/10.1002/celec.201800724>)
100. Friedman, A.K.; Shi, W.; Losovyj, Y.; Siedle, A.R.; Baker, L.A. Mapping Chemical Heterogeneity in Nafion Membranes with X-ray photoelectron spectroscopy, *J. Electrochem. Soc.*, **2018**, *165*, H733-H741. (<http://dx.doi.org/10.1149/2.0771811jes>)

99. Martinez, J.; Ashby, D.; Zhu, C.; Dunn, B.; Baker, L.A.; Siwy, Z.S. Probing Ion Current in Solid-Electrolytes at the Meso- and Nanoscale, *Faraday Discussions*, **2018**, *210*, 55-67. (<http://dx.doi.org/10.1039/C8FD00071A>)
98. Yuill, E.M.; Baker, L.A. Ion concentration in micro and nanoscale electrospray emitters, *Anal. Bioanal. Chem.*, **2018**, *410*, 3639-3648. (<http://dx.doi.org/10.1007/s00216-018-1043-5>)
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Patents

1. Provisional Patent Application 62/639012 USPTO Theta Pipette Emitter and Method Therefor
2. Patent Application #15/752,386 USPTO Electrospray Imaging and Deposition