

# Niles A Pierce

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/8314454/publications.pdf>

Version: 2024-02-01

41  
papers

10,424  
citations

159585

30  
h-index

315739

38  
g-index

46  
all docs

46  
docs citations

46  
times ranked

8033  
citing authors

| #  | ARTICLE   | IF   | CITATIONS |
|----|---|------|-----------|
| 1  | From The Cover: Triggered amplification by hybridization chain reaction. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 15275-15278. | 7.1  | 1,643     |
| 2  | Programming biomolecular self-assembly pathways. Nature, 2008, 451, 318-322.  | 27.8 | 1,339     |
| 3  | NUPACK: Analysis and design of nucleic acid systems. Journal of Computational Chemistry, 2011, 32, 170-173.   | 3.3  | 1,289     |
| 4  | Third-generation <i>in situ</i> hybridization chain reaction: multiplexed, quantitative, sensitive, versatile, robust. Development (Cambridge), 2018, 145, .                      | 2.5  | 776       |
| 5  | A Synthetic DNA Walker for Molecular Transport. Journal of the American Chemical Society, 2004, 126, 10834-10835.   | 13.7 | 720       |
| 6  | Programmable <i>in situ</i> amplification for multiplexed imaging of mRNA expression. Nature Biotechnology, 2010, 28, 1208-1212.  | 17.5 | 567       |
| 7  | Next-Generation <i>in Situ</i> Hybridization Chain Reaction: Higher Gain, Lower Cost, Greater Durability. ACS Nano, 2014, 8, 4284-4294.   | 14.6 | 504       |
| 8  | A partition function algorithm for nucleic acid secondary structure including pseudoknots. Journal of Computational Chemistry, 2003, 24, 1664-1677.                               | 3.3  | 342       |
| 9  | An autonomous polymerization motor powered by DNA hybridization. Nature Nanotechnology, 2007, 2, 490-494.   | 31.5 | 303       |
| 10 | Thermodynamic Analysis of Interacting Nucleic Acid Strands. SIAM Review, 2007, 49, 65-88.   | 9.5  | 297       |
| 11 | Adjoint Recovery of Superconvergent Functionals from PDE Approximations. SIAM Review, 2000, 42, 247-264.  | 9.5  | 280       |
| 12 | Protein Design is NP-hard. Protein Engineering, Design and Selection, 2002, 15, 779-782.  | 2.1  | 205       |
| 13 | Mapping a multiplexed zoo of mRNA expression. Development (Cambridge), 2016, 143, 3632-3637.  | 2.5  | 198       |
| 14 | Paradigms for computational nucleic acid design. Nucleic Acids Research, 2004, 32, 1392-1403.   | 14.5 | 181       |
| 15 | Single-molecule RNA detection at depth via hybridization chain reaction and tissue hydrogel embedding and clearing. Development (Cambridge), 2016, 143, 2862-7.                   | 2.5  | 174       |
| 16 | An algorithm for computing nucleic acid base-pairing probabilities including pseudoknots. Journal of Computational Chemistry, 2004, 25, 1295-1304.                                | 3.3  | 173       |
| 17 | Nucleic acid sequence design via efficient ensemble defect optimization. Journal of Computational Chemistry, 2011, 32, 439-452.   | 3.3  | 161       |
| 18 | Exact rotamer optimization for protein design. Journal of Computational Chemistry, 2003, 24, 232-243.   | 3.3  | 115       |

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|----|---|------|-----------|
| 19 | Analytic adjoint solutions for the quasi-one-dimensional Euler equations. <i>Journal of Fluid Mechanics</i> , 2001, 426, 327-345.   | 3.4  | 109       |
| 20 | Constrained Multistate Sequence Design for Nucleic Acid Reaction Pathway Engineering. <i>Journal of the American Chemical Society</i> , 2017, 139, 3134-3144.   | 13.7 | 102       |
| 21 | Adjoint and defect error bounding and correction for functional estimates. <i>Journal of Computational Physics</i> , 2004, 200, 769-794.  | 3.8  | 98        |
| 22 | Developmental Self-Assembly of a DNA Tetrahedron. <i>ACS Nano</i> , 2014, 8, 3251-3259.   | 14.6 | 97        |
| 23 | Topological constraints in nucleic acid hybridization kinetics. <i>Nucleic Acids Research</i> , 2005, 33, 4090-4095.  | 14.5 | 88        |
| 24 | Conditional Guide RNAs: Programmable Conditional Regulation of CRISPR/Cas Function in Bacterial and Mammalian Cells via Dynamic RNA Nanotechnology. <i>ACS Central Science</i> , 2019, 5, 1241-1249.  | 11.3 | 83        |
| 25 | Multiplexed miRNA northern blots via hybridization chain reaction. <i>Nucleic Acids Research</i> , 2016, 44, gkw503.  | 14.5 | 70        |
| 26 | Multidimensional quantitative analysis of mRNA expression within intact vertebrate embryos. <i>Development (Cambridge)</i> , 2018, 145, .   | 2.5  | 56        |
| 27 | Sequence Design for a Test Tube of Interacting Nucleic Acid Strands. <i>ACS Synthetic Biology</i> , 2015, 4, 1086-1100.   | 3.8  | 52        |
| 28 | A Unified Dynamic Programming Framework for the Analysis of Interacting Nucleic Acid Strands: Enhanced Models, Scalability, and Speed. <i>ACS Synthetic Biology</i> , 2020, 9, 2665-2678.   | 3.8  | 48        |
| 29 | Improved lift and drag estimates using adjoint Euler equations. , 1999, , .   |      | 47        |
| 30 | Progress in adjoint error correction for integral functionals. <i>Computing and Visualization in Science</i> , 2004, 6, 113-121.  | 1.2  | 38        |
| 31 | Conditional Dicer Substrate Formation via Shape and Sequence Transduction with Small Conditional RNAs. <i>Journal of the American Chemical Society</i> , 2013, 135, 17322-17330.  | 13.7 | 36        |
| 32 | Hybridization chain reaction enables a unified approach to multiplexed, quantitative, high-resolution immunohistochemistry and <i>in situ</i> hybridization. <i>Development (Cambridge)</i> , 2021, 148, .  | 2.5  | 35        |
| 33 | Combinatorial Analysis of mRNA Expression Patterns in Mouse Embryos Using Hybridization Chain Reaction. <i>Cold Spring Harbor Protocols</i> , 2015, 2015, pdb.prot083832.   | 0.3  | 33        |
| 34 | Selective Nucleic Acid Capture with Shielded Covalent Probes. <i>Journal of the American Chemical Society</i> , 2013, 135, 9691-9699.   | 13.7 | 31        |
| 35 | Localizing transcripts to single cells suggests an important role of uncultured deltaproteobacteria in the termite gut hydrogen economy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 16163-16168. | 7.1  | 29        |
| 36 | High-Performance Allosteric Conditional Guide RNAs for Mammalian Cell-Selective Regulation of CRISPR/Cas. <i>ACS Synthetic Biology</i> , 2021, 10, 964-971.   | 3.8  | 21        |

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|----|---|-----|-----------|
| 37 | Adjoint and Defect Error Bounding and Correction for Functional Estimates. , 2003, , .  |     | 12        |
| 38 | Signal Transduction in Human Cell Lysate <i>via</i> Dynamic RNA Nanotechnology. ACS Synthetic Biology, 2018, 7, 2796-2802.  | 3.8 | 12        |
| 39 | Multiplexed Quantitative In Situ Hybridization with Subcellular or Single-Molecule Resolution Within Whole-Mount Vertebrate Embryos: qHCR and dHCR Imaging (v3.0). Methods in Molecular Biology, 2020, 2148, 159-178. | 0.9 | 12        |
| 40 | Multiplexed Quantitative In Situ Hybridization for Mammalian Cells on a Slide: qHCR and dHCR Imaging (v3.0). Methods in Molecular Biology, 2020, 2148, 143-156.   | 0.9 | 4         |
| 41 | Multiplexed Quantitative In Situ Hybridization for Mammalian or Bacterial Cells in Suspension: qHCR Flow Cytometry (v3.0). Methods in Molecular Biology, 2020, 2148, 127-141.   | 0.9 | 0         |