

# *Curriculum vitae*

## **Joseph P. Dexter**

Neukom Institute for Computational Science  
Dartmouth College  
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### **EMPLOYMENT**

**Dartmouth College** **2018-present**  
Neukom Fellow

### **EDUCATION**

**Harvard University** **2013-2018**  
Ph.D. in Systems Biology

Dissertation: *Quantitative Approaches to Cellular Information Processing and Metabolic Regulation*  
Advisors: Jeremy Gunawardena and Vamsi Mootha

**Princeton University** **2009-2013**  
A.B. in Chemistry *cum laude*  
Certificate in Quantitative and Computational Biology

Chemistry Thesis: *Predicting Systems-Level Behavior from Biochemically Realistic Algebraic Models*  
Advisors: Jeremy Gunawardena and Tom Muir

Classics Thesis: *The Performance of Identity in Plautine Comedy*  
Advisor: Denis Feeney

### **GRANTS AND FELLOWSHIPS**

#### **Grants**

Digital Humanities Advancement Grant, National Endowment for the Humanities (co-PI with Pramit Chaudhuri, \$324,971, 2020-2023)

*Computational Tools for Diachronic and Cross-cultural Study of Literature: Multilingual Stylometry and Phylogenetic Profiling*

CoronaVirusFacts Alliance Grant, Poynter Institute (PI, \$5,000, 2020)

Digital Extension Grant, American Council of Learned Societies (co-PI with Pramit Chaudhuri, \$150,000, 2019-2020)

*Linking Literature, Bioinformatics, and Machine Learning through the Quantitative Criticism Lab*

Digital Humanities Start-Up Grant, National Endowment for the Humanities (with Pramit Chaudhuri, grant no. HD-248410-16, \$74,921, 2016-2018)

*Classical Intertextuality and Computation*

Arts, Humanities, and Social Science Fund, Office of the Provost, Dartmouth College (with Pramit Chaudhuri, \$20,000, 2015-2017)

*Computational Analysis of Intertextuality in Classical Literature*

CompX Grant, Neukom Institute for Computational Science (with Pramit Chaudhuri, \$21,500, 2014-2015)

*Computational Analysis of Intertextuality in Classical Literature*

## **Fellowships**

National Science Foundation Graduate Research Fellowship (grant no. DGE1144152, \$130,000, 2013-2016)

## **PUBLICATIONS**

\* equal contribution; \*\* corresponding author

P. Chaudhuri and **J.P. Dexter**, “More Latian Anagrams (*Aen.* 8.314-36),” forthcoming in *Classical Philology*

**J.P. Dexter** and P. Chaudhuri, “*Dardanio Anchisae*: Hiatus, Homer, and Intermetricity in the *Aeneid*,” forthcoming in *Harvard Studies in Classical Philology*

V. Mishra and **J.P. Dexter**,\*\* “Comparison of Readability of Official Public Health Information About COVID-19 on Websites of International Agencies and the Governments of 15 Countries,” *JAMA Network Open* **3** (2020) e2018033

**J.P. Dexter**,\* S. Prabakaran,\* and J. Gunawardena, “A Complex Hierarchy of Avoidance Behaviors in a Single-Cell Eukaryote,” *Current Biology* **29** (2019) 4323-4329

P. Chaudhuri, T. Dasgupta, **J.P. Dexter**,\*\* and K. Iyer, “A small set of stylometric features differentiates Latin prose and verse,” *Digital Scholarship in the Humanities* **34** (2019) 716-729

T.J. Bolt., J.H. Flynt, P. Chaudhuri, and **J.P. Dexter**,\*\* “A Stylometry Toolkit for Latin Literature,” *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing: System Demonstrations* (2019) 205-210

L. Neidorf, M.S. Krieger,\*\* M. Yakubek, P. Chaudhuri, and **J.P. Dexter**,\*\* “Large-scale quantitative profiling of the Old English verse tradition,” *Nature Human Behaviour* **3** (2019) 560-567

-Cover article

T.E. Gianitsos, T.J. Bolt, P. Chaudhuri, and **J.P. Dexter**,\*\* “Stylometric Classification of Ancient Greek Literary Texts by Genre,” *Proceedings of the 3rd Joint SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature* (2019) 52-60

**J.P. Dexter**,\* P.S. Ward,\* T. Dasgupta, A.M. Hosios, J. Gunawardena, and M.G. Vander Heiden, “Lack of evidence for substrate channeling or flux between wildtype and mutant isocitrate dehydrogenase to produce the oncometabolite 2-hydroxyglutarate,” *Journal of Biological Chemistry* **293** (2018) 20051-20061

**J.P. Dexter**, J.W. Biddle, and J. Gunawardena, “Model discrimination for Ca<sup>2+</sup>-dependent regulation of myosin light chain kinase in smooth muscle contraction,” *FEBS Letters* **592** (2018) 2811-2821

P. Chaudhuri\*\* and **J.P. Dexter**,\*\* “Bioinformatics and Classical Literary Study,” *Journal of Data Mining and Digital Humanities* (2017) <https://jdmhdh.episciences.org/3807>

-Special issue on computer-aided processing of intertextuality in ancient languages

**J.P. Dexter**,\*,\*\* T. Katz,\* N. Tripuraneni,\* T. Dasgupta,\* A. Kannan, J.A. Brofos, J.A. Bonilla Lopez, L.A. Schroeder, A. Casarez, M. Rabinovich, A. Haimson Lushkov, and P. Chaudhuri,\*\* “Quantitative criticism of literary relationships,” *Proceedings of the National Academy of Sciences USA* **114** (2017) E3195-E3204

P. Chaudhuri, **J.P. Dexter**, and J.A. Bonilla Lopez, “Strings, Triangles, and Go-betweens: Intertextual Approaches to Silius’ Carthaginian Debates,” *Dictynna* **12** (2015)

-Special issue on Flavian epic intertextuality

**J.P. Dexter**,\* T. Dasgupta,\* and J. Gunawardena, “Invariants reveal multiple forms of robustness in bifunctional enzyme systems,” *Integrative Biology* **7** (2015) 883-894

-Cover article

-Themed issue on integrative approaches for signaling and metabolic networks

**J.P. Dexter**, P. Xu, J. Gunawardena, and M.N. McClean, “Robust network structure of the Sln1-Ypd1-Ssk1 three-component phospho-relay prevents unintended activation of the HOG MAPK pathway in *Saccharomyces cerevisiae*,” *BMC Systems Biology* **9** (2015) 17

**J.P. Dexter**, M.B. Tamme, C.H. Lind, and E.-M. S. Collins, “On-chip immobilization of planarians for *in vivo* imaging,” *Scientific Reports* **4** (2014) 6388

**J.P. Dexter\*\*** and J. Gunawardena, “Dimerization and bifunctionality confer robustness to the isocitrate dehydrogenase regulatory system in *Escherichia coli*,” *Journal of Biological Chemistry* **288** (2013) 5770-5778

**J.P. Dexter**, “The Reception of Phanocles at *Georgics* 4.507-27,” *Mnemosyne* **66** (2013) 303-311

**J.P. Dexter**, “A Nineteenth-Century American Interpretation of the *Aeneid*,” *Classical World* **105** (2011) 39-56

**J.P. Dexter**, “*An Iliad*,” *Theatre Journal* **63** (2011) 453-455

**J.P. Dexter\*\*** and W. Parker, “Parallel combinatorial chemical synthesis using single-layer poly(dimethylsiloxane) microfluidic devices,” *Biomicrofluidics* **3** (2009) 034106

## PRESENTATIONS AND POSTERS

\* *presenter*

### By Invitation

**J.P. Dexter**, “Strategies for Clear Communication About COVID-19,” 2020 Big Data Conference, Center of Mathematical Sciences and Applications, Harvard University, August 2020 (virtual)

**J.P. Dexter**, “Stylometry Beyond Modern English Literature,” University of Toronto, July 2020 (virtual)

**J.P. Dexter**, “Phylogenetic profiles of long literary histories,” Renaissance Man: Re-Appraisal and Re-Invention, Jadavpur University, November 2019

**J.P. Dexter**, “Quantifying literary style and evolution,” Yale University, March 2019

**J.P. Dexter**, “Quantifying literary style and evolution,” University of Rhode Island, February 2019

P. Chaudhuri\* and **J.P. Dexter**,\* “Quantitative Criticism of Classical Literature,” University of Iowa, November 2016

**J.P. Dexter**, “Performing the Non-Canonical Antigone: The Reception of Euripides’ *Phoenissae*, 1990-2010,” Princeton-Oxford Seminar in Greek Literature: Antigone and Postclassicism, Princeton University, January 2013

## By Refereed Abstract

**J.P. Dexter**,\* and P. Chaudhuri,\* “Semantic intertextual search with Latin word embedding models,” 152<sup>nd</sup> Annual Meeting of the Society for Classical Studies, January 2021 (virtual)

T.J. Bolt,\* P. Chaudhuri, and **J.P. Dexter**,\* “A Stylometric Analysis of Latin Literary Genre,” 151<sup>th</sup> Annual Meeting of the Society for Classical Studies, Washington, D.C., January 2020

P. Chaudhuri and **J.P. Dexter**,\* “The Ship of Theseus: A framework for intertextuality connecting literature, biology, and computation,” 150<sup>th</sup> Annual Meeting of the Society for Classical Studies, San Diego, January 2019

P. Chaudhuri\* and **J.P. Dexter**,\* “More Latian Anagrams (*Aen.* 8.314-36),” 149<sup>th</sup> Annual Meeting of the Society for Classical Studies, Boston, January 2018

**J.P. Dexter**, B. Liu, B. Kotopka, P. Xu, and M.N. McClean,\* “Bandwidth measurements elucidate a rapid timescale for the regulation of aromatic amino acid metabolism in the budding yeast *Saccharomyces cerevisiae*,” 11<sup>th</sup> Annual q-bio Conference, New Brunswick, July 2017

**J.P. Dexter**,\* P. Chaudhuri, and A.S. Schwartz,\* “Phylogenetic profiling and the reception of classical drama,” 148<sup>th</sup> Annual Meeting of the Society for Classical Studies, Toronto, January 2017

P. Chaudhuri\* and **J.P. Dexter**,\* “What can computers do for philology? A case study in Pseudo-Seneca,” 147<sup>th</sup> Annual Meeting of the Society for Classical Studies, San Francisco, January 2016

**J.P. Dexter**, P. Xu, J. Gunawardena, and M.N. McClean,\* “Robust network structure of the Sln1-Ypd1-Ssk1 three-component phospho-relay prevents unintended activation of the HOG MAPK pathway in *Saccharomyces cerevisiae*,” Ninth q-bio Conference, Blacksburg, August 2015

**J.P. Dexter**,\* M. Romanello,\* P. Chaudhuri,\* T. Dasgupta, and N. Tripuraneni, “Enhancing and Extending the Digital Study of Intertextuality,” 146<sup>th</sup> Annual Meeting of the Society for Classical Studies, New Orleans, January 2015

**J.P. Dexter**, “The Performance of Identity in Plautus’ *Amphitryon*,” 145<sup>th</sup> Annual Meeting of the American Philological Association, Chicago, January 2014

**J.P. Dexter**, “*The Aeneid in Modern American* and the State of the Classics in Late Nineteenth-Century America,” Annual Meeting of the Classical Association of the Atlantic States, Baltimore, October 2011

**J.P. Dexter**, “The Crafting of Vergil’s Orpheus: Phanocles and *Georgics* 4.507-27,” Annual Meeting of the Classical Association of New England, Providence, March 2010

**J.P. Dexter**, “The Reception of Phanocles at Vergil, *Georgics* 4.507-27,” Annual Meeting of the Classical Association of the Atlantic States, Wilmington, October 2009

## Posters

T.J. Bolt., J.H. Flynt, P. Chaudhuri, and **J.P. Dexter**,\* “A Stylometry Toolkit for Latin Literature,” 2019 Conference on Empirical Methods in Natural Language Processing, Hong Kong, November 2019

T.E. Gianitsos,\* T.J. Bolt, P. Chaudhuri, and **J.P. Dexter**,\* “Stylometric Classification of Ancient Greek Literary Texts by Genre,” 3<sup>rd</sup> Joint SIGHUM Workshop on Computational Linguistics for Cultural Heritage, Social Sciences, Humanities and Literature, Minneapolis, June 2019

**J.P. Dexter**,\* P.S. Ward, T. Dasgupta, A.M. Hosios, J. Gunawardena, and M.G. Vander Heiden, “2-hydroxyglutarate production by mutant isocitrate dehydrogenase is independent of substrate channeling but sensitive to compartment-specific metabolite levels,” Biophysical Society 60<sup>th</sup> Annual Meeting, Los Angeles, February 2016

-Published abstract: *Biophysical Journal* **110** (2016) 145a

## DIGITAL PROJECTS

### Quantitative Criticism Lab

2014-present

Co-founder and co-director (with Primit Chaudhuri)

[www.qcrit.org](http://www.qcrit.org)

## TEACHING

### Dartmouth College

2019-2020

Instructor

Classical Studies 10.09/Quantitative Social Science 30.12: Quantitative Literary Criticism

### Harvard University

2016

Teaching Fellow

Human Evolutionary Biology 1290: Cultural Evolution (Joseph Henrich)

### Research Science Institute

2011-2017

Research Mentor (2014, 2016-2017), Tutor (2012-2015), Teaching Assistant (2011)

### Princeton University

2011-2013

Peer Tutor for undergraduate chemistry and geosciences courses

## SUPERVISION OF STUDENT RESEARCH

**Graduate students:** James Brofos (Ph.D., Yale, 2019-2020), Kun Yuan (M.S., Dartmouth, 2019-2020), Elizabeth Adams (Ph.D., UT Austin, 2017-2020), T.J. Bolt (Ph.D., UT Austin, 2017-2020), Adriana Casarez (M.S.I.S., UT Austin, 2015-2018)

**Undergraduate students:** Michelle Sun (2020, Dartmouth), A. Isuru Abeysekara (2020, Dartmouth), Naina Bhalla (2019-2020, Dartmouth), Elizabeth Rego (2019-2020, UT Austin), Aleksandr Fedchin (2018-2020, Bard College), Tim Gianitsos (2018, UT Austin), Elias Sanchez (2018, UT Austin), Alvin Deng (2017, UT Austin), Jeffrey Flynt (2017, UT Austin), Max Grether (2017, UT Austin), Eric Rincon (2017, UT Austin), Daniela Perry (2016, Cornell), Bailey Miller (2015-2016, Dartmouth), Caleb Caldwell (2015, Dartmouth), Jorge Bonilla Lopez (2014-2016, Dartmouth), Lea Schroeder (2014-2016, Dartmouth), James Brofos (2014-2015, Dartmouth), Ajay Kannan (2014-2015, Dartmouth)

**High School students:** Sarah Chen (2020, RSI), Kyle Li (2019-2020), Zen Grether (2017-2018), Daniel Michael (2017, RSI), Michelle Yakubek (2017, RSI), Prathik Naidu (2016-2017), Tom Dienes (2016, RSI), Krithika Iyer (2016, RSI), Theodore Katz (2014, RSI)

## SERVICE AND OUTREACH

**Conference organization** **2019-2020**  
Co-organizer of “Digital Humanities Beyond Modern English: Computational Analysis of Premodern and Non-Western Literature”

**Journal or conference referee** **2015-2020**  
*EMNLP* (2020), *Digital Scholarship in the Humanities* (2019), *Greek, Roman, and Byzantine Studies* (2019), *FEBS Letters* (2018), *Biophysical Journal* (2015)

**Systems Biology Ph.D. Program, Harvard University** **2016**  
Student recruitment

**Community House, Princeton University** **2010-2013**  
Member of the Executive Board and Project Coordinator for science outreach

## SELECTED AWARDS

John J. Keaney Thesis Prize, Princeton University, 2013

Sigma Xi, Princeton University, 2013

Finalist, Gates Cambridge Scholarship, 2013

John J. Winkler Memorial Prize, 2011

Quin Morton Essay Prize, Princeton University, 2010

Phyllis B. Katz Prize, CANE, 2010

United States Presidential Scholar, 2009

Semifinalist, Intel Science Talent Search, 2009

National Merit Scholar, 2009

Robert C. Byrd Honors Scholarship, 2009

Research Science Institute Scholar, 2008