

CURRICULUM VITAE

Mihai Pop

Last updated: April 10, 2020

Department affiliations:

Department Computer Science

Center for Bioinformatics and Computational Biology, UMIACS

Graduate Program in Applied Mathematics and Scientific Computing (affiliate)

Graduate Program in Biological Sciences (affiliate)

Rank: Professor

Citizenship: USA, Romania (European Union)

Languages: Romanian (native), English (fluent), French (fluent), German (conversational)

Education

2000 – Ph.D. Computer Science, Johns Hopkins University

1998 – M.S.E. Computer Science, Johns Hopkins University

1994 – B.S. Computer Science, Politehnica University Bucharest, Romania

Employment

1993-1994. Systems and Network Administrator. Politehnica University Bucharest, Romania

1994-1995. Teaching Assistant. Johns Hopkins University

1995-2000. Research Assistant. Johns Hopkins University

2000-2005. Bioinformatics Scientist. The Institute for Genomic Research

2004-2005. Consultant. Helicos Biosciences Corporation

2005-2006. Assistant Research Scientist. University of Maryland, UMIACS

2006-2011. Assistant Professor. University of Maryland, Department of Computer Science

2011-2012, 2013-2014. Interim Director. Center for Bioinformatics and Computational Biology, University of Maryland

2011-2016. Associate Professor. University of Maryland, Department of Computer Science and Center for Bioinformatics and Computational Biology

October 2016-October 2017. Interim Director, University of Maryland Institute for Advanced Computer Studies

October 2017 – March 2018. Associate Chair for Undergraduate Studies, Department of Computer Science

2016-present. Professor. University of Maryland, Department of Computer Science and Center for Bioinformatics and Computational Biology

August 2017- present. co-Director, Center for Health Related Informatics and Bioimaging

March 2018 – October 2018. Interim Director, University of Maryland Institute for Advanced Computer Studies.

November 2018 – present. Director, University of Maryland Institute for Advanced Computer Studies

Awards/honors

2014 – Thompson Reuters top 1% most cited researcher over past 10 years.

2015 – University of Maryland Department of Computer Science Teaching Award

2018 – Clarivate Analytics Highly Cited Researcher

2019 – Fellow of the Association for Computing Machinery (ACM)

Professional society membership

2006 – present. Association for Computing Machinery (ACM)

2008 – present. International Society for Computational Biology and Bioinformatics (ISCB)

2019 – present. American Society for Microbiology (ASM)

2019 – present. Sigma Xi (invited)

Publications

Google Scholar: 4glkLD0AAAAJ

ORCID: 0000-0001-9617-5304

Papers in Refereed Journals

The following marks apply:

* - Author worked under my supervision in this project

† - This is a genome paper, involving multiple authors. Unless otherwise noted my contribution to these papers involved performing and analyzing the assembly of the genome(s) described in the paper.

1. †Carlton, J. M., S. V. Angiuoli, et al. (44 authors). *Genome sequence and comparative analysis of the model rodent malaria parasite Plasmodium yoelii yoelii*. *Nature* 419(6906): 512-519, 2002.
2. †K.E. Nelson, C. Weinel, et al. (44 authors). *Complete genome sequence and comparative analysis of the metabolically versatile Pseudomonas putida KT2440*. *Environ Microbiol* 4(12): 799-808, 2002.
3. **M. Pop**, S.L. Salzberg, M. Shumway. *Genome sequence assembly: algorithms and issues*. *IEEE Computer* 35, pp. 47-54, 2002.
4. T.D. Read, S.L.Salzberg, **M. Pop**, M. Shumway, L. Umayam, L. Jiang, E. Holtzapple, J. Busch, K.L. Smith, J.M. Schupp, D. Solomon, P. Keim, C.M. Fraser. *Comparative genome sequencing as a method for discovery of novel polymorphisms in Bacillus anthracis*. *Science* 296, pp. 2028-2033, 2002
5. E.F. Kirkness, V. Bafna, A.L. Halpern, S. Levy, K. Remington, D.B. Rusch, A.L. Delcher, **M. Pop**, W. Wang, C.M. Fraser, J.C. Venter. *The dog genome: survey sequencing and comparative analysis*. *Science* 301(26), pp. 1898-1903, 2003

6. †T. D. Read, S. N. Peterson, et al. (52 authors). *The genome sequence of Bacillus anthracis Ames and comparison to closely related bacteria*. Nature 423(6935): 81-86, 2003.
7. **M. Pop**, A.M. Phillippy, A.L. Delcher, S.L. Salzberg. *Comparative Genome Assembly*. Briefings in Bioinformatics 5(3), pp. 237-248, September 2004.
8. **M. Pop**, D.S. Kosack, S.L. Salzberg. *Hierarchical scaffolding with Bambus*. Genome Research 14(1), pp. 149-159, 2004.
9. **M. Pop**, D. Kosack (2004). *Using the TIGR assembler in shotgun sequencing projects*. Methods Mol. Biol. 255, pp. 279-294, 2004.
10. B.V. Geisbrecht, S. Bouyain, **M. Pop**. *An optimized system for expression and purification of secreted bacterial proteins*. Protein Expr. Purif. 2005. **note: I am not senior author in this work**
11. S.L. Salzberg, J.D. Hotopp, A.L. Delcher, **M. Pop**, M.B. Eisen, W.C. Nelson. *Serendipitous discovery of Wolbachia genomes in multiple Drosophila species*. Genome Biology 6(3), pp. R23, 2005. **Highly accessed.**
12. †Loftus, B., I. Anderson, et al. (54 authors). *The genome of the protist parasite Entamoeba histolytica*. Nature 433(7028): 865-8, 2005.
13. †El-Sayed, N. M., P. J. Myler, et al. (82 authors). *The genome sequence of Trypanosoma cruzi, etiologic agent of Chagas disease*. Science 309(5733): 409-15, 2005.
14. S.R. Gill, **M. Pop**, R.T. DeBoy, P. Eckburg, I. Hance, B. Samuel, J. Gordon, D. Relman, C.M. Fraser, K.E. Nelson. *Metagenomic analysis of the human distal gut microbiome*. Science 312: 1355-1359, 2006.
15. *D.D. Sommer, A.L. Delcher, S.L. Salzberg, **M. Pop**. *Minimus: a fast, lightweight genome assembler*. BMC Bioinformatics 8:64, 2007. **Highly accessed.**
16. †Clark, A. G., M. B. Eisen, et al. (241 authors). *Evolution of genes and genomes on the Drosophila phylogeny*. Nature 450(7167), pp. 203-18, 2007.
17. †E.Ghedini, S. Wang, et al. (71 authors). *Draft Genome of the Filarial Nematode Parasite Brugia malayi*. Science 317:1756-1760, 2007.
18. M. Hammel, G. Sfyroera, S. Pyrpasopoulos, D. Ricklin, K.X. Ramyar, **M. Pop**, Z. Jin, J.D. Lambris, and B.V. Geisbrecht. *Characterization of Ehp, a secreted complement inhibitory protein from Staphylococcus aureus*. J Biol Chem, 282: 30051-30061. 2007
19. *J.R. White, M. Roberts, J.A. Yorke, **M. Pop**. *Figaro: a novel statistical method for vector sequence removal*. Bioinformatics. 24(4):462-467. 2008.
20. **M. Pop**, S.L. Salzberg. *Bioinformatics challenges of new sequencing technology*. Trends in Genetics. 24, 142-149. 2008.
21. *A.M. Phillippy, M.C. Schatz, **M. Pop**. *Genome assembly forensics: finding the elusive mis-assembly*. Genome Biology. 9:R55. 2008.
22. *N. Nagarajan, T.D. Read, and **M. Pop** *Scaffolding and validation of bacterial genome assemblies using optical restriction maps*. Bioinformatics. 24(10):1229-1235. 2008. **Featured in an article from "In Sequence" - newsletter published by Genome Web.**
23. N. Nagarajan, R. Navajas-Perez, **M. Pop**, M. Alam, R. Ming, A.H. Paterson, S.L. Salzberg. *Genome-wide analysis of repetitive elements in papaya*. Tropical Plant Biology. DOI 10.1007/s12042-008-9015-0. 2008.
24. *B. Liu, **M. Pop**. *ARDB - antibiotic resistance genes database*. Nucleic Acids Research. 37:D443-

D447, 2009.

25. *B. Langmead, C. Trapnell, **M. Pop**, and Steven L. Salzberg. *Ultrafast and memory-efficient alignment of short DNA sequences to the human genome*. *Genome Biology*. 10:R25, 2009. **note: first author co-advised by me and Steven Salzberg. Highly accessed. > 100 citations. Received Genome Biology Award for best article published in 2009.**
26. *J.R. White, **M. Pop**. *Statistical methods for detecting differentially abundant features in clinical metagenomic samples*. *PLoS Computational Biology*; 5(4): e1000352, 2009
27. *N. Nagarajan, **M. Pop**. *Parametric Complexity of Sequence Assembly: Theory and Applications to Next Generation Sequencing*. *Journal of Computational Biology* 16(7):897-908. 2009. **7th most read article in the journal during last 12 months (as of June 2010)**
28. **M. Pop**. *Genome assembly reborn: recent computational challenges*. *Briefings in Bioinformatics* 10(4):354-366. 2009.
29. M.P. Di Bonaventura, R. DeSalle, **M. Pop**, N. Nagarajan, D. Figurski, D. H. Fine, J. Kaplan, P. Planet. *Complete genome sequence of Aggregatibacter (Haemophilus) aphrophilus NJ8700*. *Journal of Bacteriology*. 191:4693-4694. 2009. **Genome announcement**
30. *B. Langmead, M.C. Schatz, J. Lin, **M. Pop**, S.L. Salzberg. *Searching for SNPs with cloud computing*. *Genome Biology*, 10:R134 2009 **Highly accessed. note: first and second authors co-advised with Steven Salzberg**
31. S. Navlakha, J. White, N. Nagarajan, **M. Pop**, and Carl Kingsford. *Finding Biologically Accurate Clusterings in Hierarchical Decompositions Using the Variation of Information*. *Journal of Computational Biology* 16(7):897-908. 2009. **conference version in RECOMB2009 also listed below**
32. †P.E. Chen, C. Cook, A.C. Stewart, N. Nagarajan*, D.D. Sommer*, **M. Pop**, B. Thomason, M.P. Kiley, S. Lentz, N. Nolan, S. Sozhamannan, A. Sulakvelidze, A. Mateczun, L. Du, M.E. Zwick, T.D. Read *Genomic characterization of the Yersinia genus*. *Genome Biology*, 11:R1, 2010 **Highly accessed.**
33. C. Kingsford, M.C. Schatz and **M. Pop**. *Assembly complexity of prokaryotic genomes using short reads*. *BMC Bioinformatics*, 11:21, 2010. **Highly accessed.**
34. *J. R. White, S. Navlakha, N. Nagarajan, M.R. Ghodsi, C. Kingsford, **M. Pop**. *Alignment and clustering of phylogenetic markers - implications for microbial diversity studies*. *BMC Bioinformatics*, 11:152, 2010. **Highly accessed.**
35. *N. Nagarajan, C. Cook, M.P. diBonaventura, H. Ge, A. Richards, K.A. Bishop-Lilly, R. DeSalle, T.D. Read, **M. Pop**. *Finishing genomes with limited resources: lessons from an ensemble of microbial genomes*. *BMC Genomics*. 11:242, 2010. **Highly accessed.**
36. J. V. Lopez, A. Ledger, L. Z. Santiago-Vázquez, **M. Pop**, D. D. Sommer, L. K. Ranzer, R. A. Feldman and R. G. Kerr. *Suppression subtractive hybridization PCR isolation of cDNAs from a Caribbean soft coral*. *Electronic Journal of Biotechnology* 14(1):2011
37. D. A. Rasko, P. L. Worsham, T. G. Abshire, S. T. Stanley, J. D. Bannan, M. R. Wilson, R. J. Langham, R. S. Decker, L. Jiang, T. D. Read, A. M. Phillippy, S. L. Salzberg, **M. Pop**, M. N. Van Ert, L. J. Kenefic, P. S. Keim, C. M. Fraser-Liggett and J. Ravel. *Bacillus anthracis comparative genome analysis in support of the Amerithrax investigation*. *Proceedings of the National Academy of Sciences*. 18(12):5027-5032. 2011
38. J. Wetzel, C. Kingsford, **M. Pop**. *Assessing the benefits of using mate-pairs to resolve repeats in de*

- novo short-read prokaryotic assemblies*. BMC Bioinformatics. 12:95. 2011
39. *B. Liu, **M. Pop**. *MetaPath: identifying differentially abundant metabolic pathways in metagenomic datasets*. BMC Proceedings. 5(Suppl 2):S9. 2011. **conference version in ISBRA 2010**.
 40. *M.Ghodsi, B. Liu, **M. Pop**. *DNACLUST: accurate and efficient clustering of phylogenetic marker genes*. BMC Bioinformatics. 12:271. 2011
 41. Liu*, T. Gibbons*, M. Ghodsi*, T. Treangen*, **M. Pop**. *Accurate and fast estimation of taxonomic profiles from metagenomic shotgun sequences*. BMC Genomics. 11(Suppl 2): S4. 2011. **conference version in BIBM 2010**.
 42. S. Koren*, T.J. Treangen*, **M. Pop**. *Bambus 2: Scaffolding Metagenomes*. Bioinformatics 27 (21): 2964-2971. 2011
 43. D.R. Kelley, B. Liu*, A.L. Delcher, **M. Pop**, S.L. Salzberg. *Gene prediction with Glimmer for metagenomic sequences augmented by classification and clustering*. Nucleic Acids Research. 2011.
 44. Salzberg, S.L., A.M. Phillippy, A.V. Zimin, D. Puiu, T. Magoc, S. Koren, . . . J.A. Yorke, *GAGE: A critical evaluation of genome assemblies and assembly algorithms*. Genome Research, 2011.
 45. Ye, C., Z. Ma, C. Cannon, **M. Pop**, and D. Yu, *Exploiting sparseness in de novo genome assembly*. BMC Bioinformatics, 2012. 13(Suppl 6): p. S1. (**conference version also listed below**)
 46. Liu, B., L.L. Faller, N. Klitgord, V. Mazumdar, M. Ghodsi, D.D. Sommer, . . . S. Amar, *Deep sequencing of the oral microbiome reveals signatures of periodontal disease*. PLoS ONE, 2012. 7(6): p. e37919.
 47. Lin, H.C.* , S. Goldstein, L. Mendelowitz*, S. Zhou, J. Wetzel, D.C. Schwartz, and **M. Pop**, *AGORA: Assembly Guided by Optical Restriction Alignment*. BMC Bioinformatics, 2012. 13: p. 189.
 48. Del Canto, F., D.J. Botkin, P. Valenzuela, V. Popov, F. Ruiz-Perez, J.P. Nataro, M.M. Levine, O.C. Stine, **M. Pop**, A.G. Torres, R. Vidal, *Identification of Coli Surface Antigen 23, a Novel Adhesin of Enterotoxigenic Escherichia coli*. Infect Immun, 2012. 80(8): p. 2791-801.
 49. Human Microbiome Project Consortium (**2nd author**), *A framework for human microbiome research*. Nature, 2012. 486(7402): p. 215-21.
 50. Human Microbiome Project Consortium, *Structure, function and diversity of the healthy human microbiome*. Nature, 2012. 486(7402): p. 207-14.
 51. Gevers, D., **M. Pop**, P.D. Schloss, and C. Huttenhower, *Bioinformatics for the Human Microbiome Project*. PLoS Comput Biol, 2012. 8(11): p. e1002779.
 52. Treangen, T.J., S. Koren*, D.D. Sommer*, B. Liu*, I. Astrovskaia*, B. Ondov, A.E. Darling, A.M. Phillippy, and **M. Pop**, *MetAMOS: a modular and open source metagenomic assembly and analysis pipeline*. Genome Biol, 2013. 14(1): p. R2.1. **Highly accessed**
 53. Nagarajan, N. and **M. Pop**, *Sequence assembly demystified*. Nat Rev Genet, 2013. 14(3): p. 157-67.
 54. M.C. Schatz, A.M. Phillippy, D.D. Sommer, A.L. Delcher, D. Puiu, G. Narzisi, S.L. Salzberg, **M. Pop**. *Hawkeye and AMOS: visualizing and assessing the quality of genome assemblies*. Briefings in Bioinformatics. 14(2):213-224. 2013. PMC3603210
 55. Lindsay, B., B. Ochieng, et al., *Quantitative Polymerase Chain Reaction for Detection of Shigella Improves Ascertainment of Shigella Burden in Children with Moderate to Severe Diarrhea in Low Income Countries*. Journal of Clinical Microbiology, 2013. 51(6) 1740-1746.

56. Bishop-Lilly, K.A., H. Ge, A. Butani, B. Osborne, K. Verratti, V. Mokashi, N. Nagarajan, **M. Pop**, T.D. Read, and A.L. Richards, *Genome sequencing of four strains of Rickettsia prowazekii, the causative agent of epidemic typhus, including one flying squirrel isolate*. Genome announcements, 2013. 1(3). PMC3695431 **genome announcement**
57. Lindsay, B., **M. Pop**, et al. (52 authors), *Alternative Methods of Bacterial Pathogen Detection: Culture, GoldenGate(R), Universal Biosensor(R), 16S rRNA-Gene Survey*. J Clin Microbiol, 2013.
58. Ghodsi, M.*, C.M. Hill*, I. Astrovskaaya*, H. Lin*, D.D. Sommer*, S. Koren, and **M. Pop**, *De novo likelihood-based measures for comparing genome assemblies*. BMC Res Notes, 2013. 6(1): p. 334.
59. Nijkamp, J.F.*, **M. Pop**, M.J. Reinders, and D. de Ridder, *Exploring variation-aware contig graphs for (comparative) metagenomics using MaryGold*. Bioinformatics, 2013.
60. Paulson, J.N.*, O.C. Stine, H.C. Bravo, and **M. Pop**, *Differential abundance analysis for microbial marker-gene surveys*. Nature Methods, 2013. 10(12)
61. Koren, S.*, T. Treangen, C. M.Hill*, **M. Pop**, and A. Phillippy, *Automated ensemble assembly and validation of microbial genomes*. BMC Bioinformatics, 2014. 15(1): p. 126. **highly accessed**.
62. **Pop, M.**, A.W. Walker, et al. (35 authors), *Diarrhea in young children from low-income countries leads to large-scale alterations in intestinal microbiota composition*. Genome Biol, 2014. 15(6): p. R76.PMC 4072981. **highly accessed**.
63. Nguyen, N.-p., S. Mirarab, B. Liu*, **M. Pop**, and T. Warnow, *TIPP: taxonomic identification and phylogenetic profiling*. Bioinformatics, 2014. 30(24): p. 3548-3555.
64. Mendelowitz, L.* and **M. Pop**, *Computational methods for optical mapping*. GigaScience, 2014. 3(1): p. 33. **review**
65. Almeida, M.*, A. Hebert, A.-L. Abraham, S. Rasmussen, C. Monnet, N. Pons, C. Delbes, V. Loux, J.-M. Batto, P. Leonard, S. Kennedy, S. Ehrlich, **M. Pop**, M.-C. Montel, F. Irlinger and P. Renault, *Construction of a dairy microbial genome catalog opens new perspectives for the metagenomic analysis of dairy fermented products*. BMC Genomics, 2014. 15(1): p. 1101.
66. Brianna, L., Oundo, J., et al. (28 authors), *Microbiota That Affect Risk for Shigellosis in Children in Low-Income Countries*. Emerging Infectious Disease Journal, 2015. 21(2): p. 242.
67. Mendelowitz*, L.M., D.C. Schwartz, and **M. Pop**, *Maligner: a fast ordered restriction map aligner*. Bioinformatics, 2015.
68. Almeida, M.*, **M. Pop**, E. Le Chatelier, E. Prifti, N. Pons, A. Ghozlane, and S. Dusko Ehrlich. *Capturing the most wanted taxa through cross-sample correlations*. ISME J. 2016.
69. Nguyen, N-P, T. Warnow, **M. Pop**, B. White. *A perspective on 16S rRNA operational taxonomic unit clustering using sequence similarity*. NPJ Biofilms and Microbiomes. 2:p. 16004. 2016.
70. **Pop, M.**, J.N. Paulson*, S. Chakraborty, I. Astrovskaaya*, B.R. Lindsay, S. Li, H.C. Bravo, C. Harro, J. Parkhill, A.W. Walker, R.I. Walker, D.A. Sack, and O.C. Stine, *Individual-specific changes in the human gut microbiota after challenge with enterotoxigenic Escherichia coli and subsequent ciprofloxacin treatment*. BMC Genomics, 2016. 17(1): p. 1-11.
71. Morris, A., J.N. Paulson*, H. Talukder, L. Tipton, H. Kling, L. Cui, A. Fitch, **M. Pop**, K.A. Norris, and E. Ghedin, *Longitudinal analysis of the lung microbiota of cynomolgous macaques during long-term SHIV infection*. Microbiome, 2016. 4(1): p. 38.PMC4939015
72. Ghurye, J.S.*, V. Cepeda-Espinoza*, and **M. Pop**, *Metagenomic Assembly: Overview, Challenges and Applications*. The Yale Journal of Biology and Medicine, 2016. 89(3): p. 353-362.

73. Davison, M., T.J. Treangen, S. Koren, **M. Pop**, and D. Bhaya, *Diversity in a Polymicrobial Community Revealed by Analysis of Viromes, Endolysins and CRISPR Spacers*. PLOS ONE, 2016. 11(9): p. e0160574.
74. Del Canto, F., M. O'Ryan, M. Pardo, A. Torres, D. Gutiérrez, L. Cádiz, R. Valdés, A. Mansilla, R. Martínez, D. Hernández, B. Caro, M.M. Levine, D.A. Rasko, C.M. Hill*, **M. Pop**, O.C. Stine, and R. Vidal, *Chaperone-Usher Pili Loci of Colonization Factor-Negative Human Enterotoxigenic Escherichia coli*. Frontiers in Cellular and Infection Microbiology, 2017. 6(200).
75. Chopyk, J., S. Chattopadhyay, P. Kulkarni, E. Claye, K.R. Babik, M.C. Reid, E.M. Smyth, L.E. Hittle, J.N. Paulson, R. Cruz-Cano, **M. Pop**, S.S. Buehler, P.I. Clark, A.R. Sapkota, and E.F. Mongodin, *Mentholation affects the cigarette microbiota by selecting for bacteria resistant to harsh environmental conditions and selecting against potential bacterial pathogens*. Microbiome, 2017. 5(1): p. 22.
76. Chopyk, J., S. Chattopadhyay, P. Kulkarni, E.M. Smyth, L.E. Hittle, J.N. Paulson, **M. Pop**, S.S. Buehler, P.I. Clark, E.F. Mongodin, and A.R. Sapkota, *Temporal Variations in Cigarette Tobacco Bacterial Community Composition and Tobacco-Specific Nitrosamine Content Are Influenced by Brand and Storage Conditions*. Front Microbiol, 2017. 8: p. 358. PMC5339245
77. Ghurye, J.*, **M. Pop**, S. Koren, D. Bickhart, and C.-S. Chin, *Scaffolding of long read assemblies using long range contact information*. BMC Genomics, 2017. 18(1): p. 527. PMC5508778
78. Nathan D. Olson, Todd J. Treangen*, Christopher M. Hill*, Victoria Cepeda-Espinoza*, Jay Ghurye*, Sergey Koren, **Mihai Pop**. *Metagenomic assembly through the lens of validation: recent advances in assessing and improving the quality of genomes assembled from metagenomes*. Briefings in Bioinformatics. 2017.
79. Chung, M., J. Krueger, and **M. Pop**, *Identification of microbiota dynamics using robust parameter estimation methods*. Math Biosci, 2017. 294: p. 71-84.
80. Sczyrba, A., P. Hofmann, et al. (67 authors), *Critical Assessment of Metagenome Interpretation-a benchmark of metagenomics software*. Nat Methods, 2017.
81. Olson, N.D.^#, T.J. Treangen, C.M. Hill, V. Cepeda-Espinoza#, J. Ghurye#, S. Koren, and **M. Pop***, *Metagenomic assembly through the lens of validation: recent advances in assessing and improving the quality of genomes assembled from metagenomes*. Brief Bioinform, 2017.
82. Shah, N.^#, S.F. Altschul, and **M. Pop***, *Outlier detection in BLAST hits*. Algorithms Mol Biol, 2018. 13: p. 7.
83. Kulkarni, P., N.D. Olson, J.N. Paulson, **M. Pop**, C. Maddox, E. Claye, R.E. Rosenberg Goldstein, M. Sharma, S.G. Gibbs, E.F. Mongodin, and A.R. Sapkota, *Conventional wastewater treatment and reuse site practices modify bacterial community structure but do not eliminate some opportunistic pathogens in reclaimed water*. Sci Total Environ, 2018. 639: p. 1126-1137.
84. Meisel, J.S., D.J. Nasko, et al., *Current progress and future opportunities in applications of bioinformatics for biodefense and pathogen detection: report from the Winter Mid-Atlantic Microbiome Meet-up, College Park, MD, January 10, 2018*. Microbiome, 2018. 6(1): p. 197. PMC6219074
85. Zhu, L., M. Torres, W.Q. Betancourt, M. Sharma, S.A. Micallef, C. Gerba, A.R. Sapkota, A. Sapkota, S. Parveen, F. Hashem, E. May, K. Kniel, **M. Pop**, and S. Ravishankar, *Incidence of fecal indicator and pathogenic bacteria in reclaimed and return flow waters in Arizona, USA*.

- Environmental Research, 2019. 170: p. 122-127.
86. Panthi, S., A.R. Sapkota, et al., *Pharmaceuticals, herbicides, and disinfectants in agricultural water sources*. Environ Res, 2019. 174: p. 1-8.
 87. Shah, N.*, J.S. Meisel*, and **M. Pop**, *Embracing Ambiguity in the Taxonomic Classification of Microbiome Sequencing Data*. Frontiers in Genetics, 2019. 10(1022).
 88. Sakowski, E., Uritskiy, G., et al., *Current State of and Future Opportunities for Prediction in Microbiome Research: Report from the Mid-Atlantic Microbiome Meet-up in Baltimore on 9 January 2019*. mSystems, 2019. 4(5): p. e00392-19.
 89. Chopyk, J., D.J. Nasko, S. Allard, A. Bui, T. Treangen, **M. Pop**, E.F. Mongodin, and A.R. Sapkota, *Comparative metagenomic analysis of microbial taxonomic and functional variations in untreated surface and reclaimed waters used in irrigation applications*. Water Research, 2020. 169: p. 115250.
 90. Chopyk, J., D.J. Nasko, et al., *Metagenomic analysis of bacterial and viral assemblages from a freshwater creek and irrigated field reveals temporal and spatial dynamics*. Science of The Total Environment, 2019: p. 135395.
 91. Bickhart, D.M., M. Watson, et al., *Assignment of virus and antimicrobial resistance genes to microbial hosts in a complex microbial community by combined long-read assembly and proximity ligation*. Genome Biology, 2019. 20(1): p. 153.
 92. Ghurye, J.*, T. Treangen, M. Fedarko*, W.J. Hervey, and **M. Pop**, *MetaCarvel: linking assembly graph motifs to biological variants*. Genome Biology, 2019. 20(1): p. 174.
 93. Mitchell, K., J.J. Brito, et al., *Benchmarking of computational error-correction methods for next-generation sequencing data*. Genome Biology, 2020. 21(1): p. 71.

Papers in Refereed Conferences

1. A. Aggarwal, S. R. Kosaraju, **M. Pop**. *Drawing of two-dimensional irregular meshes*; GD '98: Sixth Symposium on Graph Drawing, August 13-15, 1998; Montreal, Canada. Lecture Notes in Computer Science, v. 1547, pp. 1-14. **note: authors in alphabetical order**
2. S. R. Kosaraju, **M. Pop**. *De-Amortization of Algorithms*; The Fourth Annual International Computing and Combinatorics Conference, COCOON '98, August 12-14, 1998; Taipei, Taiwan. **note: authors in alphabetical order**
3. G. Barequet, C. Duncan, M. T. Goodrich, S. Kumar, **M. Pop**. *Efficient Perspective-Accurate Silhouette Computation*; video presentation at ACM Symposium on Computational Geometry '99. **note: authors in alphabetical order.**
4. **M. Pop**, G. Barequet, C. Duncan, M.T. Goodrich, W. Huang, S. Kumar. *Efficient Perspective-Accurate Silhouette Computation and Applications*; Proceedings of the 17th ACM Symposium on Computational Geometry, June 3-5 2001, Tufts University, Medford, MA
5. S. Navlakha, J. White, N. Nagarajan, **M. Pop**, and Carl Kingsford. *Finding Biologically Accurate Clusterings in Hierarchical Decompositions Using the Variation of Information*. RECOMB 2009. **Note: journal version also listed above.**
6. *M. Ghodsi, **M. Pop**. *Inexact local alignment search over suffix arrays*. in Proceedings of the 2009 IEEE International Conference on Bioinformatics and Biomedicine (BIBM). Washington, DC. November 1-4, pp: 83-87, 2009. **also listed as poster presentation**
7. *B. Liu. **M. Pop**. *Identifying Differentially Abundant Metabolic Pathways in Metagenomic*

Datasets. in Proceedings of the 6th International Symposium on Bioinformatics Research and Applications (ISBRA). Storrs, CT. May 2010. **Note: journal version also listed above.**

8. *B. Liu, *T. Gibbons, *M. Ghodsi, and **M. Pop**. *MetaPhyler: Taxonomic profiling for metagenomic sequences*. in Proceedings of BIBM 2010. Hong Kong, December 2010. **Note: journal version also listed above.**
9. Ye, C., Z. Ma, C. Cannon, **M. Pop**, and D. Yu, *Exploiting sparseness in de novo genome assembly*. RECOMB-seq, Barcelona, Spain. April 2012.
10. C.M. Hill*, C.H. Albach*, S.G. Angel*, **M. Pop**. *K-mulus: Strategies for BLAST in the cloud*. 10th International Conference on Parallel Processing and Applied Mathematics (PPAM) Warsaw, Poland, September 2013.
11. C.M. Hill*, Irina Astrovskaya*, Howard Huang*, Sergey Koren, Todd Treangen, Atif Memon, and **Mihai Pop**. *De novo likelihood-based measures for comparing metagenomic assemblies*. IEEE International Conference on Bioinformatics and Biomedicine (BIBM) Shanghai, China, December 2013.
12. Ghurye, J*. and **M. Pop**, *Better Identification of Repeats in Metagenomic Scaffolding*, in Algorithms in Bioinformatics: 16th International Workshop, WABI 2016, Aarhus, Denmark, August 22-24, 2016. Proceedings, M. Frith and N.C. Storm Pedersen, Editors. 2016, Springer International Publishing: Cham. p. 174-184.
13. Brian Brubach*, Jay Ghurye*, Aravind Srinivasan and **Mihai Pop**. *Better Greedy Sequence Clustering with Fast Banded Alignment*. in Algorithms in Bioinformatics: 17th International Workshop, WABI 2017, Boston, MA, August 21-23, 2017.
14. Nidhi Shah*, Stephen Altschul and **Mihai Pop**. *Outlier detection in BLAST hits*. in Algorithms in Bioinformatics: 17th International Workshop, WABI 2017, Boston, MA, August 21-23, 2017.

Books

1. Pop, M., & Touzet, H. (Eds.). (2015). *Algorithms in Bioinformatics: 15th International Workshop, WABI 2015*: Springer.

Book chapters

1. E. Brill, **M. Pop**. *Unsupervised Learning of Disambiguation Rules for Part-of-Speech Tagging*; in Natural Language Processing Using Very Large Corpora; Kluwer Academic Publishers; 1999
2. **M. Pop**. *Shotgun sequence assembly*. in Advances in Computers vol. 60, pp. 194-159, M. Zelkowitz ed.; 2004.
3. J-H. Choi, H. Tang, S. Kim, **M. Pop**. *Computational Approaches for Genome Assembly Validation*. in Biological data mining, J.Y. Chen and S. Lonardi eds. Chapman & Hall/CRC Computational Science Series. pp. 163-187. 2009
4. V. Mai, **M. Pop**, M. Schell. *Metagenomic Analysis of Human Gut Microbiota*. in Metagenomics and its Applications in Agriculture. Nova Science Publishers, R. W. Li ed; 2010.
5. N. Nagarajan and **M. Pop**. *Sequencing and Genome Assembly Using Next-Generation Technologies*. Methods in Molecular Biology. 673:1-17. 2010

6. *T.J. Treangen, *D.D. Sommer, F.E. Angly, *S. Koren, **M. Pop**. *Next Generation Sequence Assembly with AMOS*. in Current Protocols in Bioinformatics. 2011
7. M. Almeida#, **M. Pop***^ . *High-Throughput Sequencing as a Tool for Exploring the Human Microbiome*. in Metagenomics for Microbiology, Elsevier, J. Izard ed; 2014.
8. Simpson, J.T. and **Pop, M**. *The theory and practice of genome sequence assembly*. in Annual Review of Genomics and Human Genetics, vol. 16: 153-172. 2015 doi: 10.1146/annurev-genom-090314-050032
9. Gene Myers, **Mihai Pop**, Knut Reinert, Tandy Warnow. *Next generation sequencing (Dagstuhl seminar 16351)*. Dagstuhl Reports 6(8). 2017.
10. Altschul, S.F. and **M. Pop**, *Sequence Alignment*, in *Handbook of Discrete and Combinatorial Mathematics*, K.H. Rosen, Editor. 2017, CRC Press: Boca Raton, FL.

Other publications

1. **M. Pop**. *We are what we eat: how the diet of infants affects their gut microbiome*. Genome Biology 13, 152. 2012. **Research highlight**
2. **M. Pop** and S. L. Salzberg. *Use and mis-use of supplemental material in science publications*. BMC Bioinformatics., 16:237. 2015. **Editorial**
3. Shah, N., M.G. Nute, T. Warnow, and **M. Pop**, *Misunderstood parameter of NCBI BLAST impacts the correctness of bioinformatics workflows*. Bioinformatics, 2018. **Letter to the editor**
4. Cagle, R., P. Ramachandran, E. Reed, S. Commichaux, M.K. Mammel, D.W. Lacher, D. Miller, S. Lindley, **M. Pop**, M.C. Bazaco, B. Wolpert, E.A. Strain, S. Aker, J. Feely, and A. Ottesen, *Microbiota of the Hickey Run Tributary of the Anacostia River*. Microbiol Resour Announc, 2019. 8(12).PMC PMC6430318. **Data set announcement**
5. Treangen, T.J. and **M. Pop**, *You can't always sequence your way out of a tight spot: Next-generation sequencing holds great promise for pathogen detection, but the devil is in the details*. EMBO Rep, 2018. 19(12).PMC PMC6280640. **Invited perspective**

Contracts and Grants

Current

1. Aug 1, 2015 – Aug 31, 2020 (\$916,391, Corrada Bravo PI). NIH R01-GM-114267. *Integrative Visual and Computational Exploratory Analysis of Genomics Data*.
2. March 1, 2016 – Feb 28, 2020. (\$10,000,000, Sapkota PI, I am head of the data core with a budget of \$767,000) CONSERVE: *A Center of Excellence at the Nexus of Sustainable Water Reuse, Food, and Health*.
3. December 1, 2019 – November 30, 2023 (\$2,644,000, Pop PI). NIH R01-AI-100947. *Algorithms and software for the assembly of metagenomic data*.

Completed

4. Jan 1, 2007- Sep 31, 2010 (\$980,123, PI). Henry Jackson Foundation. *Assembly and gene finding algorithms for genome sequences generated by pyrosequencing*.
5. Sep 1, 2007- Mar 31, 2011(\$201,256, PI on subcontract to UM School of Medicine). Bill and Melinda Gates Foundation. SR00000277: *New Technologies in Diagnosis of Enteric Diseases*.
6. Sep 1, 2008 – Aug 31, 2013 (\$445,358, PI). National Science Foundation. IIS-0812111 III-CXT-

- Small: Graphs to Diversity: extracting genomic variation from sequence graphs.*
7. Sep 24, 2008 – Jul 31, 2012 (\$780,000, PI). NIH. R01-HG004885: *Assembly and analysis software for exploring the human microbiome.*
 8. Apr 1, 2009 – Mar 31, 2013 (\$380,000, PI). National Science Foundation. IIS-0844494 *Algorithms for the analysis of data from massively-parallel genome sequencing*
 9. May 1, 2009 – April 30, 2013. (\$183,175, PI on subcontract to U. Wisc.) NIH R01-HG-000225. *New physical methodologies for genomic analysis.*
 10. Aug 1, 2009 – Jul 31, 2011. (\$43,570, PI on subcontract to JHU). NSF DEB-0918907. *MSB: Community Structure, Genomic Heterogeneity, and Metabolic Diversity of the Microbiome of the oldest and driest desert on Earth, the Atacama desert in Northern Chile.*
 11. Aug 27, 2009 – Aug 26, 2010. (\$3,000, PI on subcontract to JHU). NASA. *Community structure of the microbiome of a Mars-like environment, the Atacama Desert, Chile*
 12. Sep 23, 2009 – Jul 31, 2015. (\$380,604, PI on subcontract to U. Pittsburgh). NIH U01-HL-098962. *Pathogenesis of obstruction/emphysema and the microbiome (POEM) in HIV.*
 13. Sep 24, 2009 – Jul 31, 2010 (\$110,000, PI). NIH. administrative supplement to R01-HG-004885: *Assembly and analysis software for exploring the human microbiome.*
 14. Jan 1, 2011 – Oct 31, 2014. (\$653,925, PI on subcontract to UM. School of Medicine). Bill and Melinda Gates Foundation. *Metagenomics-Based Discovery of New Viral Pathogens Causing Diarrheal Disease.*
 15. Aug 1, 2011 – Jul 31, 2012. (\$2,150,999, PI). Office of Naval Research N000141110905. *Personalized Medicine Initiative (Congressional earmark to establish a personalized medicine infrastructure at the University of Maryland).*
 16. Sep 1, 2011 – Aug 31, 2015 (\$492,809, PI). National Science Foundation IIS-1117247 *III: Small: Genome Assembly Using Sparse Sequence Information.*
 17. Sep 16, 2011 – Nov 15, 2011. (\$75,000, PI). Lockheed Martin Corporation *Genomics collaboration*
 18. Sep 1, 2012 – Jun, 30, 2016. (\$183,175, PI on subcontract to U. Wisc.) NIH R01-HG-000225. *New physical methodologies for genomic analysis.*
 19. Mar 21, 2013 – Feb 28, 2017. (\$1,779,715, PI). NIH R01-AI-100947 *Algorithms and Software for the Assembly of Metagenomic Data.*
 20. Sept 1, 2013 – Aug 31, 2018 (\$18,700,000, Key personnel). NIH P50-CA-180523 *Rapid Response Characterization of New and Manipulated Tobacco Products*
 21. Oct 23, 2015 – Aug 25, 2018 (\$210,792, PI). NRL. *High performance tools for metagenomic data assembly and analysis. (cooperative agreement: N00173162C001)*
 22. 2016 (\$9,600, PI). REU Supplement to NSF IIS-1513615 to support two undergraduate summer interns.
 23. Sep 1, 2015 – Aug 31, 2019 (\$373,288, co-PI). NSF III:CIF:Medium: *Collaborative Research: Scalable and Highly Accurate Methods for Metagenomics*

Invited talks (last 3 years)

1. *Metagenomics analysis at the strain level resolution.* Radcliffe Institute, Harvard, Cambridge, MA, June 2017.
2. *Challenges and opportunities in computational microbiome-ology.* German Conference on

- Bioinformatics. Tübingen, Germany, September 2017. **Keynote presentation**
3. *Characterizing and quantifying the world's microbiota*. US NIST, Gaithersburg, MD, September 2017
 4. *Computational challenges in quantifying the microbiome and its impact on human health*. Johns Hopkins University, Baltimore, MD, November 2017.
 5. *Challenges and opportunities in characterizing microbiomes*. Plant and Animal Genomes Conference, Exploring Phytobiomes Workshop. San Diego, CA, January 2018.
 6. *Challenges and opportunities in computational microbiome-ology*. Rutgers University, Camden. March 2018.
 7. *From clustering to variant discovery: algorithmic opportunities in microbiome research*. Workshop on Algorithms in Bioinformatics (WABI) and ALGO 2018, Helsinki, Finland, August 2018. **Keynote presentation.**
 8. *Challenges and opportunities in computational microbiome-ology*. 2018 Glycobiology SIG Workshop: On the Crossroads of Glycobiology, Immunology and the Microbiome. NIH, September 2018.
 9. *Using computers to understand microbial communities*. Morgan State University, Baltimore, MD, March 2019.
 10. *Uncovering heterogeneity in microbial communities*. International Conference on Research in Computational Biology (RECOMB 2019), Washington, DC. May 2019. **Keynote presentation.**

Software packages

Assembly

1. AMOS – a modular open-source assembly package
<http://amos.sourceforge.net>
2. BAMBUS – genome scaffolding software.
<http://amos.sourceforge.net/docs/bambus>.
3. Figaro – statistical vector trimming for shotgun sequencing projects.
<http://amos.sourceforge.net/Figaro>.
4. SOMA – scaffolding of genome data using optical maps.
<http://www.cbcb.umd.edu/soma>.

Metagenomics

5. metAMOS – assembly package for metagenomic data
<http://www.cbcb.umd.edu/software/metamos>
6. MetaStats – statistical software for comparing metagenomic libraries
<http://metastats.cbcb.umd.edu>
7. MetaPath – statistical software for comparing metagenomic data-sets at the pathway level.
<http://www.cbcb.umd.edu/software/metapath>
8. Metaphyler – software for estimating the taxonomic composition of a community from whole-metagenomic data.
<http://cbcb.umd.edu/software/metaphyler>
9. MetagenomeSeq – software for association studies in metagenomic data.

<http://cbcb.umd.edu/software/metagenomeSeq>

10. MetaCompass – reference guided assembly for metagenomics
<https://github.com/marbl/MetaCompass>
11. MetaCarvel – scaffolding and structural variant discovery for metagenomics
<https://github.com/marbl/MetaCarvel>
12. MetagenomeScope – visualization of metagenomic assembly graphs
<http://mgsc.umiacs.io>

Alignment software

13. Bowtie – sequence aligner for short-read sequencing data
<http://bowtie-bio.sf.net>
14. Crossbow – SNP calling pipeline relying on cloud computing resources
<http://bowtie-bio.sf.net/crossbow>
15. DNACLUST – software for rapid clustering of DNA sequences.
<http://dnacust.sf.net>

Databases

16. ARDB – antibiotic resistance genes database
<http://arbd.cbcb.umd.edu>

Editorial/Review Duties

Editorial Boards

- Microbiome – section editor (2018 -)
- Metagenomics – Mathematical, Statistical and Computational Methods – Editorial Advisory Board member (2015 -)
- Microbiome – associate editor (2012 – 2018)
- PeerJ Computer Science – associate editor (2015 – 2018)
- IEEE Transactions on Computational Biology and Bioinformatics – associate editor (2015 – 2017)
- BMC Bioinformatics – section editor (2010 – 2016) managed editorial activities for ~40 academic editors.
- Biological Procedures Online – editorial board member (2007 - 2008)

Reviewer for journals

Annals of Mathematics and Artificial Intelligence, Bioinformatics, BioMed Central journals (BMC Bioinformatics, BMC Plant Biology, BMC Genomics, Genome Biology), Biotechniques, Chemical Reviews, Computer Programs and Methods in Biomedicine, Genome Research, IEEE Transactions on Nanobioscience, Journal of Computational Biology, Molecular Ecology, Molecular Biology and Evolution, Nature Review Genetics, Nature Methods, Nucleic Acids Research, PLoS Computational Biology, PLoS One.

Conference Program Committees

I regularly serve on program committees for the ISMB, RECOMB, ACM-BCB, and WABI

conferences as well as other conference in the field.

Conferences Organized

RECOMB-Seq 2014 (co-chair)

WABI 2015 (program co-chair)

2016 – co-organizer of Dagstuhl seminar on Next Generation Sequencing – Algorithms, and Software For Biomedical Applications: Myers, G., **M. Pop**, K. Reinert, and T. Warnow, *Next Generation Sequencing (Dagstuhl Seminar 16351)*. Dagstuhl Reports, 2017. 6(8): p. 91-130.

2018. Co-organized – *M3 meeting on Biodefense and Pathogen detection* – College Park, MD, January 2018.

2018. Area chair – Metagenomics and Microbial Genomics – ISMB 2018. Chicago, IL, July 2018.

2018. Program co-chair – ACM-BCB 2018. Washington, DC, August 2018.

Teaching

Full-semester courses (last five years)

- Spring 2014. CMSC424 – *Database Design*. 50 students.
- Fall 2014. CMSC 701 – *Computational Genomics*. 30 students
- Fall 2014. CMSC 828Q – *Lectures in bioinformatics*. 3 students
- Spring 2015. CMSC 423 – *Bioinformatic algorithms, databases, and tools*. 51 students
- Fall 2015. CMSC701 – *Computational Genomics*. 37 students
- Spring 2016. CMSC131 – *Object oriented programming I*. 152 students
- Fall 2016. CMSC701 – *Computational genomics*. 37 students
- Fall 2016. CMSC423 – *Bioinformatics*. 52 students
- Fall 2017. CMSC423 – *Bioinformatics*. 78 students
- Fall 2018. CMSC423 – *Bioinformatics*. 90 students
- Spring 2019. CMSC702 – *Computational genomics*. 29 students
- Fall 2019. CMSC423 - *Bioinformatics*, 96 students

Seminars/Short courses

Summer 2012. Metagenomics course at the University of Chile, Santiago, Chile.

Spring 2013. Assembly course at Institut Pasteur, Paris, France

2014-2017. Metagenomic assembly as part of *Strategies and Techniques for Analyzing Microbial Population Structures* course at the Marine Biological Laboratory in Woods Hole, MA.

2018. *Bow to the microbial overlords*. Session organized at the Annual Biomedical Research Conference for Minority Students (ABRCMS) introducing the field of metagenomics.

Indianapolis, IN, October 2018.

2017 – present, co-Director, *Strategies and Techniques for Analyzing Microbial Population Structures* course at the Marine Biological Laboratory in Woods Hole, MA. This is an intensive, hands-on, ~10 day course focusing on the analytical tools used to understand microbial community structures.

Advising

High school

Laura Tanase, summer intern, 2015
Shilpa Roy, intern, 2016-2017
Abbe Miller, intern, 2017-2018
Kassie Wang, summer intern, 2018, 2019
Tracy Nguyen, intern, 2018-2019
Wendy Wu, intern, 2019-2020

Undergraduate

Elaine Nsoesie. Summer intern, 2006
Christopher Hill. 2007 – Spring 2010 (currently engineer at Google)
Dan Sugarman. Fall 2008 – Fall 2009
Matt Thomas, Spring 2009
Carl Albach, Spring 2009 – Spring 2011
Sebastian Angel, Spring 2009 – Summer 2011 (currently faculty at U. Penn)
Joshua Wetzel, Summer 2010
Petar Stojanov, Summer 2010 (co-advised with Liliana Florea)
Joseph Paulson, Spring 2010 – Summer 2010
Howard Huang, Summer 2013 (co-advised with Chris Hill)
Andrew Consroe, Fall 2014 – Spring 2016
Amelia Bateman, Fall 2016
Matthew Myers, Spring 2015 – 2017
Samina Hussain, Spring 2017
Marcus Fedarko, Fall 2016 – 2018
Larry Feldman, Summer 2018
Hope Winovitch, Fall 2018
Amnah Mahmood, Fall 2018
Dylan Taylor, 2018 -2019
Dmitry Leontyev, Spring 2019
Marie Crane, Summer 2019

Master's

Benjamin Langmead (CMSC) Spring 2008 – Summer 2009 (co-advised with Steven Salzberg.
Ben is currently an assistant professor of Computer Science at Johns Hopkins
University)
Maya Zuhl (CMSC) Fall 2008 – Summer 2009

Doctoral

Current

Brook Stacy (CS), 2017 -
Saul Sarria (BISI), 2017 -
Brian Brubach (CS), 2016 – 2019 (co-advised with Aravind Srinivasan)
Seth Commichaux (BISI), 2017 -
Kiran Javkar (CS), 2017 -

Nidhi Shah (CS), 2016 -
Victoria Cepeda Espinoza (CS), 2014 -
Harihara Muralidharan (CS), 2019 -

Alumni

James White (AMSC) 2007 – 2010 (James is now a freelance bioinformatician)
Bo Liu (CBMG/CS) 2007 – 2012 (Bo has joined Square Inc.)
Sergey Koren (CS) 2007 – 2012 (after graduation Sergey joined NBACC and is currently a
scientists at NIH/NHGRI)
MohammadReza Ghodsi (CS) 2008 – 2012 (Mohammad has joined Google)
Mike Schatz (CS) 2009 – 2010 (co-advised with Steven Salzberg. Mike joined Cold Spring Harbor
Laboratories as an assistant professor and then joined Johns Hopkins University as
an associate professor in Computer Science)
Brianna Lindsay (Epidemiology) 2010 – 2014 (co-advised with O. Colin Stine, after graduation
Brianna was a scientist at Merck and then joined the University of Pennsylvania as a
senior project coordinator)
Joseph Paulson (AMSC) 2010 – 2015 (co-advised with Héctor Corrada Bravo, was postdoctoral
fellow at Dana Farber Cancer Institute then joined Genentech)
Chris Hill (CS) 2010 – 2015 (was postdoctoral fellow at U. of Washington and has then joined
Google)
Lee Mendelowitz (AMSC) Summer 2011 – 2015 (Lee has joined the Washington Nationals
baseball team as an analyst)
Jay Ghurye (CS), 2015 – 2018 (Jay has joined Dovetail Genomics)

Graduate rotation/advisory committees

Apratim Mitra (ANSC) 2008 – Graduate Advisory Committee member
Yuan Lee (CBMG) Spring 2009. rotation student
Albert Yu (BISI) 2009-2014 – Graduate Advisory Committee member
Carly Muletz (BISI) 2013 – Graduate Advisory Committee member
Steve Smith (BISI) 2014 – Graduate Advisory Committee member

Post-doctoral

Current

Jackie Meisel (Ph.D. U. Penn) 2017 -

Alumni

Niranjan Nagarajan (Ph.D. Cornell University) 2007–2009. (Niranjan is now a senior research
scientist in computational and mathematical biology at the Genome Institute of
Singapore)
Todd Treangen (Ph.D. Technical University of Catalonia) 2010-2011 (Todd is an assistant
professor at Rice University)
Henry Lin (Ph.D. UC Berkeley) 2010 – 2012 (Henry is currently a senior data scientist at
Ancestry)

Irina Astrovskaya (Ph.D. Georgia State University) 2011-2014 (currently a Bioinformatics Engineer at the Flatiron Institute in Baltimore)

Mathieu Almeida (Ph.D. Université Paris-Sud Orsay) 2013 – 2017 (currently a researcher at INRA, Jouy-en-Josas, France)

Service

Professional

- 2008 – 2013. Chair, Maize Genome Database Working Group
- Feb. 2009. Life Sciences Advisory Board for Opgen Inc (Gaithersburg, MD).
- 2009 – 2010. Member, DOE Systems Biology Knowledgebase Advisory Committee.
- 2011 – 2012. Co-lead, Data Analysis Working Group, Human Microbiome Project
- 2011 – 2012. Lead, Assembly subgroup, Human Microbiome Project
- 2012. Morgan State University, Baltimore, MD. External reviewer of the Bioinformatics Program
- 2013 – INRIA Team Evaluation Expert Panel (France)
- 2013. Newton Institute, Cambridge UK. Member of Scientific Advisory Committee for Metagenomics Programme
- 2015 – 2018. NIH/NIAID Genomic Centers for Infectious Disease Steering Committee
- 2016 – 2018. Scientific Advisory Board. Metacardis Project. European Union project studying the underlying causes of metabolic disease, obesity, and heart disease.
- 2015 – 2018. Scientific Advisory Board. Resist'Eaume Project. Suez, France.

Grant review

- National Institutes of Health (2005-2008 – *ad hoc* member on GGG-J panel, ~1-2 panels/year)
- U.S. Civilian Research and Development Foundation (2006)
- Research Council of Norway (2007)
- Mathematics of Information Technology and Complex Systems, Canada (2008)
- National Cancer Institute (2008, 2009)
- Defense Threat Reduction Agency Joint Science and Technology Office, Office for Chemical and Biological Defense. (2009)
- Wellcome Trust, UK. (2009)
- European Research Council (2009)
- U.S. Department of Energy (2004, 2010)
- North Carolina Biotech Center (2011)
- U.S. Army Research and Materiel Command (2006, 2012)
- Agence Nationale de Recherche (French Research Agency) (2011, 2013)
- BBSRC (UK) (2014)
- Austrian Science Fund (2015)
- Canada Foundation for Innovation (2015)
- National Institutes of Health (2009, 2010, 2012, 2013, 2014, 2015, 2016)
- National Science Foundation (2003, 2009, 2010, 2012, 2017)
- Standing member on BDMA study section for the National Institutes of Health (2017-2022)

Meetings organized

- 2005. Co-organizer of the Fifth Annual RECOMB Satellite Meeting on DNA Sequencing Technologies and Computation. 2005, Stanford University, CA.
- 2008 Co-organizer for InformaticsMaryland 2008. Rockville, MD. January 2008.
- 2009. *Poster co-chair* for IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Washington, DC. November 1-4, 2009.
- 2010. *Member, organizing committee*. Human Microbiome Research Conference. St. Louis, MO. August 31-September 2, 2010.
- 2012. *Program co-chair*. ICCABS 2012. Las Vegas, NV. February 23-25, 2012
- 2012. *Track co-chair*. ACM BCB 2012. Orlando, FL. October 7-10, 2012.
- 2013-2014. *Conference chair*. RECOMB Seq 2014. Pittsburgh, PA, April 2014.
- 2015. *Program co-chair*. WABI 2015. Atlanta, GA, September 2015.
- 2016. *Co-organizer*. Mid-Atlantic Microbiome Meet-up. College Park, November 2016
- 2016. *Co-organizer*. Dagstuhl seminar on next generation sequencing - Algorithms and Software for Biomedical Applications. Dagstuhl, Germany, September 2016.
- 2017. *Co-organizer*. Mid-Atlantic Microbiome Meet-up/CAMI joint meeting. College Park, May 2017.
- 2018. Co-organizer. Mid-Atlantic Microbiome Meet-up on Biodefense and Pathogen detection, College Park, January 2018.
- 2018. *Program co-chair*. ACM BCB 2018. Washington, DC, August 2018

Departmental committees

2006-7 – Chair, faculty search committee for Center for Bioinformatics and Computational Biology

2007-8 – Member, faculty search committee for CBCB

2007-8, 2009-10 – Coordinator, Friday Faculty Lunches

2007-8, 2009-10 – Member, UMIACS APT committee

2010-2011 – Chair, committee to evaluate Masters student writing skills as part of Middle States Evaluation of Graduate Writing.

2011-2012 – Director search committee for CBCB.

2013-2015 – Member, Merit Review Committee

2006-10, 2014-2015 – Member, CS graduate admissions committee

2014-2015 – Member, Strategic Planning committee (chaired subcommittee on diversity)

2014-2015 – Member, Recruiting for Diversity committee

2014-2015 – Member, Department Council

2014-2015 – Member, UMIACS steering committee

2014-2015 – Member, UMIACS external review planning committee

2014-2017 – Member, Recruiting for Diversity committee.

2008-present – Member, Teaching Evaluation Committee

2017 – 2018 - Chair, Diversity and Inclusion Committee.

2018 – present – Member, Diversity and Inclusion Committee

College/Campus Committees

2007-8, 2008-9 – Member, AMSC graduate admissions committee

May 2009- May 2012 – Faculty Representative for CMPS on University Senate
2009-present – Member, Council for the Computational Biology, Bioinformatics and Genomics concentration area within the Biological Sciences Graduate Program
Spring 2012 – UMCP-UMB SEED grant review
Spring 2014 – Student Researcher of the Year review committee
Spring 2015 – UMCP-UMB SEED grant review
2015 – 2016 – Member, DC@UMD Large Data Analytics Working Group
Spring 2017 – UMCP-UMB SEED grant review
2015 – 2017 – Limited Submissions Review Committee
2017 – 2019 – co-chair, Year of Data Science organization committee
2017- 2018 – member, Task Force on Centers and Institutes
2017-2018 - member, Task Force on Computing

**Candidacy and defense committees (last 3 years)
(in Computer Science unless otherwise marked)**

Spring 2017 – Oral exam committee for Khoa Trinh
Spring 2017 – PhD Defense Committee for Steven Smith (BISI)
Spring 2017 – Thesis defense committee for Daniel Ayres (BISI)
Spring 2017 – Chair, Oral exam committee for Jay Ghurye
Spring 2017 – Oral exam committee for Joshua Brulé
Summer 2017 – Chair, Oral exam committee for Victoria Cepeda
Fall 2017 – PhD Defense Committee for Jessica Goodheart (BISI)
Fall 2017 – Oral exam committee for Dietrich Schmidt (ENST)
Fall 2017 – Oral exam committee for Jessica Chopyk (SPH)
Spring 2018 – PhD Defense Committee for Amit Chavan
Spring 2018 – Oral exam committee for Alison Smith
Spring 2018 – PhD Defense Committee for Nathan Olson (BISI)
Summer 2018 – PhD Defense Committee for Justin Wagner
Summer 2018 – PhD Defense Committee for Kun Wang (BISI)
Summer 2018 – PhD Defense Committee for Yanzhou Liu (ECE)
Fall 2018 – Chair, PhD Defense Committee for Jay Ghurye
Spring 2019 – PhD Defense Committee for Jessica Chopyk (Public Health)
Spring 2019 – PhD Defense Committee for Joshua Brulé
Spring 2019 – Chair, Oral exam committee for Seth Commichaux (BISI)
Summer 2019 – Chair, Oral exam committee for Nidhi Shah
Fall 2019 – Oral exam committee for Reynold Yu (BISI)
Fall 2019 – PhD Defense Committee for Hadi Yami
Fall 2019 – Oral exam committee for Hirak Sarkar
Fall 2019 – Oral exam committee for Fatemeh Almodaresi
Fall 2019 – PhD Defense Committee for Alison Smith

External candidacy and defense committees

Summer 2017 – Thesis defense committee – Justin Krueger (Virginia Tech)

Fall 2018 – Thesis defense committee – Michael Nute (University of Illinois, Urbana Champaign)