

# CURRICULUM VITAE of Nicholas G. Reich <sup>1</sup>

## CONTACT

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## EDUCATION

Ph.D. in Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2010  
Thesis title: *Statistical methods for incomplete data from infectious disease outbreaks*  
Thesis advisor: [Ron Brookmeyer](#)  
B.A. in English, Carleton College, 2001, *magna cum laude*

## PROFESSIONAL EXPERIENCE

2017 - Associate Professor, Department of Biostatistics and Epidemiology  
University of Massachusetts, Amherst  
2013 - 2017 Assistant Professor, Department of Biostatistics and Epidemiology  
University of Massachusetts, Amherst  
2011 - 2013 Research Assistant Professor, Department of Biostatistics and Epidemiology  
University of Massachusetts, Amherst  
2010 - 2011 Post-doctoral fellow, Department of Epidemiology & Department of Hospital  
Epidemiology and Infection Control, Johns Hopkins University  
2006 - 2010 Research Assistant, Department of Biostatistics, Johns Hopkins University  
2006 - 2008 Statistical Consultant, Maryland League of Conservation Voters  
2005 Research Assistant, Framingham Heart Study, Boston, MA

## HONORS AND AWARDS

2019 Director's Award, 3rd year extension to funded DARPA Young Faculty Award  
2019 Nominated for College Outstanding Teacher Award, UMass-Amherst SPHHS  
2015 First place, Award for Outstanding Research Articles in Biosurveillance,  
International Society of Disease Surveillance  
2015 Nominated for College Outstanding Teacher Award, UMass-Amherst SPHHS  
2013 Honorable Mention for coarseDataTools R package, [Open Source Software Initiative](#)  
2012 Open Education Initiative Award  
Provost's Office and the University Libraries at UMass-Amherst  
2010 Statistics in Epidemiology Young Investigator Award  
American Statistical Association, Statistics in Epidemiology Section  
2010 First prize, Student Research Competition  
American Public Health Association, Statistics Section  
2009 [Helen Abbey Award](#) for excellence in teaching  
Department of Biostatistics, Johns Hopkins School of Public Health

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<sup>1</sup>Last updated February 16, 2019

## ORIGINAL RESEARCH

[Full citation list at Google Scholar](#)

### Under review, under revision, or submitted

---- = mentored student author

51. **Reich NG**, McGowan C, Yamana T, Tushar A, Ray EL, Osthus D, Kandula S, Brooks L, Moore E, Crawford-Crudell W, Gibson GC, Moore E, Silva R, Biggerstaff M, Johansson MA, Rosenfeld R, Shaman J. A Collaborative Multi-Model Ensemble for Real-Time Influenza Season Forecasting in the U.S.
50. Johansson, MA, et al. Advancing probabilistic epidemic forecasting through an open challenge: The Dengue Forecasting Project.
49. Rivers C, Chretien JP, Riley S, Pavlin JA, Woodward A, Brett-Major D, Maljkovic Berry I, Morton L, Jarman RG, Biggerstaff M, Johansson MA, **Reich NG**, Meyer D, Snyder M, Pollett S. Using “outbreak science” to strengthen the use of models during epidemics.
48. Brown AC, Lauer SA, Robinson CC, Nyquist AC, Rao S, **Reich NG**. Evaluating the ALERT algorithm for local outbreak onset detection in seasonal infectious disease surveillance data.
47. Radonovich LJ, Simberkoff MS, Bessesen MT, Brown AC, Cummings DAT, Gaydos C, Los J, Krosche AE, Gibert CL, Gorse GJ, Nyquist AC, **Reich NG**, Rodriguez-Barradas MC, Price CS, Perl TM. Effectiveness of Respirators versus Medical Masks for Prevention of Viral Respiratory Infection and Illness among U.S. Healthcare Personnel: The Respiratory Protection Effectiveness Clinical Trial (ResPECT).
46. Whitcomb B, Madonna L, Roy A, **Reich NG**, Bertone-Johnson E, Healy A. Inflammation during gestation; a longitudinal study of plasma cytokine measures in uncomplicated pregnancies.

### Published

45. **Reich NG**, Brooks L, Fox S, Kandula S, McGowan C, Moore E, Osthus D, Ray EL, Tushar A, Yamana T, Biggerstaff M, Johansson MA, Rosenfeld R, Shaman J. A collaborative multiyear, multimodel assessment of seasonal influenza forecasting in the United States *PNAS*. 2019. [ [preprint](#) ; [html](#) ]
44. McGowan C, Biggerstaff M, Johansson M, Apfeldorf K, Ben-Nun M, Brooks L, Convertino M, Erraguntla M, Farrow D, Freeze J, Ghosh S, Hyun S, Kandula S, Lega J, Liu Y, Michaud N, Morita H, Niemi J, Ramakrishnan N, Ray EL, **Reich NG**, Riley P, Shaman J, Tibshirani R, Vespignani A, Zhang Q, Reed C. Collaborative efforts to forecast seasonal influenza in the United States, 2015-2016. *Sci Rep*. 2019, 9(683). [ [html](#) ]
43. Lauer SA, Sakrejda K, Ray EL, Suangtho P, Hinjoy S, Iamsirithaworn S, Suthachana S, Cummings DAT, Lessler J, **Reich NG**. Prospective forecasts of annual dengue hemorrhagic fever incidence in Thailand, 2010-2014. *PNAS*. 2018, 115(10) : E2175-E2182 [ [html](#) ]
42. **Reich NG**, Lessler J, Varma JK, Vora NM. Quantifying the Risk and Cost of Active Monitoring for Infectious Diseases. *Nat Sci Rep*. 2018, 8: 1093. [ [html](#) ; [preprint](#) ]
41. Ray EL, **Reich NG**. Prediction of infectious disease epidemics via weighted density ensembles. *PLOS Comp Bio*. 2018, 14(2): e1005910. [ [html](#) ; [preprint](#) ]
40. Frederick J, Brown AC, Cummings DAT, Gaydos CA, Gibert CL, Gorse GJ, Los JG, Nyquist AC, Perl TM, Price CS, Radonovich LJ, **Reich NG**, Rodriguez-Barradas MC, Bessesen MT, Simberkoff MS, for the ResPECT Team. Protecting Healthcare Personnel in Outpatient Settings: The Influence of Mandatory Versus Nonmandatory Influenza Vaccination Policies on Workplace Absenteeism During Multiple Respiratory Virus Seasons. *Infect Control Hosp Epidemiol*. 2018. [ [html](#) ]
39. Wang X, **Reich NG**, Horton N. Enriching Students’ Conceptual Understanding of Confidence Intervals: An Interactive Trivia-based Classroom Activity. *American Statistician*. 2018. [ [preprint](#) ]

38. Freeman JR, Whitcomb BW, Roy A, Bertone-Johnson ER, **Reich NG**, Healy AJ. A pilot longitudinal study of anti-Müllerian hormone levels throughout gestation in low risk pregnancy. *Health Science Reports*. 2018, e53.
37. Ray EL, Sakrejda K, Lauer SA, Johansson MA, **Reich NG**. Infectious disease prediction with kernel conditional density estimation. *Statistics in Medicine*. 2017. 36(30): 4908-4929. [ [html](#); [preprint](#) ]
36. Tushar A, **Reich NG**. flusight: interactive visualizations for infectious disease forecasts. *The Journal of Open Source Software*. 2017, 2(13). [ [html](#) ]
35. **Reich NG**, Lauer SA, Sakrejda K, Iamsirithaworn S, Hinjoy S, Suangtho P, Suthachana S, Clapham H, Salje H, Cummings DAT, Lessler J. Challenges in real-time prediction of infectious disease: a case study of dengue in Thailand. *PLOS Neglected Tropical Diseases*. 2016, 10(6): e0004761. [ [html](#); [pdf](#) ]
34. **Reich NG**, Lessler J, Sakrejda K, Lauer SA, Iamsirithaworn S, Cummings DAT. Case studies in evaluating time series prediction models using the relative mean absolute error. *American Statistician*. 2016, 70(3):285-292. [ [html](#); [pdf](#) ]
33. Lessler J, Ott CT, Carcelen AC, Konikoff JM, Williamson J, Bi Q, **Reich NG**, Cummings DAT, Kucirka LM, Chaisson LH. Time to Key Events in the Course of Zika Infection and their Implications for Surveillance: A Systematic Review and Pooled Analysis. *Bulletin of the World Health Organization*. 2016, 94:841-849. [ [pdf](#) ]
32. Johansson MA, **Reich NG**, Hota A, Brownstein JS, Santillana M. Evaluating the performance of infectious disease forecasts: A comparison of climate-driven and seasonal dengue forecasts for Mexico. *Scientific Reports*. 2016, 6: 33707. [ [html](#) ; [pdf](#) ]
31. Radonovich LJ, Bessesen M, Cummings DAT, Eagan A, Gaydos C, Gibert C, Gorse G, Nyquist C, **Reich NG**, Rodriguez-Barradas M, Savor-Price C, Shaffer R, Simberkoff M, Perl TM. The Respiratory Protection Effectiveness Clinical Trial (ResPECT): A Cluster-Randomized Comparison of Respirator and Medical Mask Effectiveness against Respiratory Infections in Healthcare Personnel. *BMC Infectious Diseases*. 2016. 16:243. [ [html](#) ; [pdf](#) ]
30. Hart V, Sturgeon SR, **Reich NG**, Sievert LL, Crawford SL, Gold EB, Avis NE, Reeves KW. Menopausal vasomotor symptoms and incident breast cancer risk in the Study of Women's Health Across the Nation. *Cancer Causes & Control*. 2016, 27(11):1333-1340. [ [html](#) ]
29. Silveira M, Wexler L, Chamberlain J, Straubaur KM, Spencer R, **Reich NG**, Bertone-Johnson ER. Seasonality of Suicide Behavior in Northwest Alaska: 1990-2009. *Public Health*. 2016, 137: 35-43. [ [html](#) ; [pdf](#) ]
28. **Reich NG**, Cummings DAT, Lauer SA, Zorn M, Robinson C, Nyquist AC, Price CS, Simberkoff M, Radonovich LJ, Perl TM. Triggering Interventions for Influenza: The ALERT Algorithm. *Clinical Infectious Diseases*. 2015, 60(4): 499-504. [ [html](#) ; [pdf](#) ]
27. Lauer SA, Kleinman KP, **Reich NG**. The Effect of Cluster Size Variability on Statistical Power in Cluster Randomized Trials. *PLoS ONE*. 2015, 10(4): e0119074 [ [html](#) ; [pdf](#) ]
26. Hart V, Reeves KW, Sturgeon SR, **Reich NG**, Sievert LL, Kerlikowske K, Ma L, Shepherd J, Tice J, Sprague BL. The effect of weight change on volumetric measures of mammographic density. *Cancer Epidemiol Biomarkers Prev*. 2015, 24(4):761. [ [html](#) ]
25. Barney LE, Dandley EC, Jansen LE, **Reich NG**, Mercurio AM, Peyton SR. Integrin Expression and Phenotype Predict Breast Cancer Metastasis. *Integrative Biology*. 2015, 7: 198-212. [ [html](#) ; [pdf](#) ]
24. Elfawal M, Towler MJ, **Reich NG**, Weathers PJ, Rich SM. Dried whole plant *Artemisia annua* slows evolution of malaria drug resistance and overcomes resistance to artemisinin. *PNAS*. 2015, 112(3): 821-826. [ [html](#) ; [pdf](#) ]

23. Hart V, Reeves KW, Sturgeon SR, **Reich NG**, Sievert LL, Kerlikowske K, Ma L, Shepherd J, Tice J, Mahmoudzadeh AP, Malkov S, Sprague BL. The effect of change in body mass index on volumetric measures of mammographic density. *Cancer Epi Biomarkers Prev.* 2015, 24:1724-1730. [[html](#) ; [pdf](#)]
22. **Reich NG**, Shrestha S, King AA, Rohani P, Lessler J, Kalayanarooj S, Yoon IK, Gibbons RV, Burke DS, Cummings DAT. Interactions between serotypes of dengue highlight epidemiological impact of cross-immunity. *Journal of the Royal Society Interface.* 2013, 10 (86), 20130414. [[html](#) ; [pdf](#)]
21. Milstone AM, **Reich NG**, Advani S, Yuan G, Bryant K, Coffin SE, Huskins C, Livingston R, Saiman L, Smith PB, Song X. Catheter Dwell Time and CLABSI in Neonates with PICCs: A Multicenter Cohort Study. *Pediatrics.* 2013, 132(6): 21609-e1615. [[html](#) ; [pdf](#)]
20. Lee RM, Lessler J, Lee RA, Rudolph KE, **Reich NG**, Perl TM and Cummings DAT. Incubation periods of viral gastroenteritis: a systematic review. *BMC Infectious Diseases.* 2013, 13: 446. [[html](#) ; [pdf](#)]
19. Milstone AM, Elward A, Song X, Zerr DM, Orscheln R, Speck K, Obeng D, **Reich NG**, Coffin SE, Perl TM for the Pediatric SCRUB Trial Study Group. Daily Chlorhexidine Bathing To Reduce Bacteremia in Critically Ill Children: a Multicenter, Cluster-Randomized, Two-Period Crossover Trial. *The Lancet.* 381 (9872), 1099-1106. [[html](#) ; [pdf](#)]
18. Passaretti CL, Otter JA, **Reich NG**, Myers JA, Shepard J, Howard T, Carroll KC, Lipsett P, Perl TM. Environmental decontamination with hydrogen peroxide vapor reduces the risk of patient acquisition of multidrug-resistant organisms. *Clinical Infectious Diseases.* 2013, 56(1): 27-35. [[html](#) ; [pdf](#)]
17. Jumani K, Advani S, **Reich NG**, Gosey L, Milstone AM. Complications Associated with Peripherally Inserted Central Venous Catheters in Children. *JAMA Pediatrics.* 2013, 167 (5): 429–435. [[html](#) ; [pdf](#)]
16. Xu G, Wesker J, White C, Campbell J, **Reich NG**, Rich SM. Detection and heterogeneity of *Borrelia burgdorferi* in Ixodes ticks by culture-dependent and culture-independent methods. *Journal of Clinical Microbiology.* 2013, 51(2): 615-617. [[html](#) ; [pdf](#)]
15. Popoola V, Tamma P, **Reich NG**, Perl TM, Milstone AM. Risk Factors for Persistent MRSA Colonization in Children with Multiple Intensive Care Unit Admissions. *Infection Control and Hospital Epidemiology.* 2013, 34(7): 748–750.[[html](#)]
14. Popoola VO, Carroll KC, Ross T, **Reich NG**, Perl TM and Milstone AM. Impact of Colonization Pressure and Strain Type on MRSA Transmission in Children. *Clinical Infectious Diseases.* 2013, 57(10): 1458–1460. [[html](#) ; [pdf](#)]
13. Rock C, Harris AD, **Reich NG**, Johnson JK, Thom KA. Is hand hygiene before donning non-sterile gloves in the ICU a waste of health care worker time? A randomized controlled trial. *American Journal of Infection Control.* 2013, 41(11): 994–996. [[html](#) ; [pdf](#)]
12. **Reich NG**, Myers JA, Obeng D, Milstone AM, Perl TM. Empirical power and sample size calculations for cluster-randomized and cluster-randomized crossover studies. *PLoS ONE* 2012, 7(4): e35564. [[html](#) ; [pdf](#)]
11. **Reich NG**, Lessler J, Cummings DAT, Brookmeyer R. Estimating absolute and relative case fatality ratios from infectious disease surveillance data. *Biometrics.* 2012, 68(2): 598-606. [[html](#) ; [pdf](#)]
10. Elfawal M, Towler MJ, **Reich NG**, Golenbock D, Weathers PJ, Rich SM. Dried Whole Plant *Artemisia annua* as an Antimalarial Therapy. *PLoS ONE.* 2012, 7(12): e52746. [[html](#) ; [pdf](#)]
9. Huntington I, Shrestha S, **Reich NG**, Hagopian A. Career intentions of Nepali medical students: A survey-based cross-sectional study. *Health Policy and Planning.* 2012, 27(5): 417-428. [[html](#) ; [pdf](#)]
8. **Reich NG**, Lessler J, Perl TM, Cummings DAT. Visualizing clinical evidence: citation networks for the incubation periods of respiratory viral infections. *PLoS ONE.* 2011, 6(4): e19496. [[html](#) ; [pdf](#)]

7. An M, **Reich NG**, Crawford SO, Brookmeyer R, Louis TA, Nelson KE. Stochastic simulation of a blood product donation environment with demand spikes and supply shocks. *PLoS ONE* 2011, 6(7): e21752. [[html](#); [pdf](#)]
6. Advani S, **Reich NG**, Sengupta A, Gosey L, Milstone AM. Central Line Associated Bloodstream Infections in Hospitalized Children with Peripherally Inserted Central Venous Catheters. *Clinical Infectious Diseases*. 2011, 52(9): 1108-1115. [[html](#); [pdf](#)]
5. **Reich NG**, Lessler J, Cummings DAT, Brookmeyer R. Estimating incubation periods with coarse data. *Statistics in Medicine*. 2010, 28(22): 2769–2784. [[html](#); [pdf](#)]
4. Lessler J, Brookmeyer R, **Reich NG**, Nelson KE, Cummings DAT, Perl TM. Identifying Probable Sources of Infection for Respiratory Viruses. *Infection Control and Hospital Epidemiology*. 2010, 31(8): 809-15. [[html](#); [pdf](#)]
3. Lessler J, **Reich NG**, Cummings DAT and The DOHMH Swine Influenza Investigation Team. Outbreak of 2009 Pandemic Influenza A (H1N1) at a New York City School. *New England Journal of Medicine*. 2009, 361(27): 2628-2636. [[html](#); [pdf](#)]
2. Lessler J, **Reich NG**, Brookmeyer R, Perl TM, Nelson KE, Cummings DAT. A systematic review of the incubation periods of acute respiratory viral infections. *Lancet Infectious Diseases*. 2009, 9(5): 291–300. [[html](#); [pdf](#)]
1. Crawford SO, **Reich NG**, An M, Brookmeyer R, Louis TA, Nelson KE, Notari EP, Trouern-Trend J, and Zou S. Regional and temporal variation in American Red Cross blood donations, 1995–2005. *Transfusion*. 2009, 48: 1576-1583. [[html](#); [pdf](#)]

## COMMENTARIES & REVIEWS

5. Johansson MA, **Reich NG**, Myers LA, Lipsitch M. Preprints: An underutilized mechanism to accelerate outbreak science. *PLOS Medicine*. 2018, 15(4) : e1002549. [ [html](#) ]
4. **Reich NG**, Milstone AM. Improving efficiency in cluster-randomized study design and implementation: taking advantage of a crossover. *Open Access Journal of Clinical Trials*. 2014, 6: 11-15. [[pdf](#)]
3. Shardell M, **Reich NG**, Perencevich EN. Commentary: Back to the future with Sir Bradford Hill: statistical analysis with hospital-acquired infections. *International Journal of Epidemiology*. 2013, 42(5): 1509-1510. [[html](#) ; [pdf](#)]
2. Bessesen MT, Savor-Price C, Simberkoff M, **Reich NG**, Pavia AT, Radonovich LJ. 95 Respirators or Surgical Masks to Protect Healthcare Workers Against Respiratory Infections: Are We There Yet? *American Journal of Respiratory and Critical Care Medicine*. 2013, 187(9): 904-905. [[html](#) ; [pdf](#)]
1. **Reich NG**, Lessler J, Chu H, Cole S. Commentary: Identification of the asymptomatic ratio. *Epidemiology*. 2011, 22(3): 333-335. [[html](#)]

## PUBLISHED DATA RESOURCES & WEB APPS

5. Tushar A, **Reich NG**. FluSight. November 2016. <http://dx.doi.org/10.5281/zenodo.192509>.
4. **Reich NG**. Determining Durations for Active Monitoring. July 2016. <http://iddynamics.jhsph.edu/apps/shiny/activemonitr/>.
3. CDCepi, Johansson MA, **Reich NG**, Rivers C, Yu Z, Chen D. Zika: Data repository of publicly available Zika data. February 2016. <http://dx.doi.org/10.5281/zenodo.46717>

2. **Reich NG**, Ray EL. Predictions from CDC influenza prediction competition, 2015-2016. March 2016. <http://dx.doi.org/10.5281/zenodo.46840>.
1. Lauer SA, **Reich NG**. The ALERT Algorithm. November 2014. <http://iddynamics.jhsph.edu/apps/shiny/ALERT/>.

## GRANTS AND CONTRACTS

- NIH, R35 research grant (\$1.9m Total Costs) Sept 2016 - Aug 2021  
*Statistical methods for real-time forecasts of infectious disease: dynamic time-series and machine learning approaches*  
 PI: Reich. The R35 mechanism is the NIGMS-sponsored Maximizing Investigators' Research Award.
- DARPA, Young Faculty Award (\$470K TC) Sept 2016 - Jan 2020  
*Optimal Infectious Disease Prediction with Multi-Scale Ensemble Models*  
 PI: Reich.
- NIH, R21 research grant (\$450K TC) Dec 2014 – Nov 2016  
*Inference for interacting pathogens with mechanistic and phenomenological models.*  
 PI: Reich
- NIH, R01 research grant (\$2.5m TC) Feb 2013 – Jan 2018  
*Methods for reducing spatial uncertainty and bias in disease surveillance.*  
 PI: Justin Lessler (JHSPH). Co-Is: Reich, Derek Cummings (JHSPH), Sopon Iamsirithaworn (Thailand MoPH).  
 Lessler, Reich, and Cummings contribute equally to modeling efforts on this grant.  
 Reich is PI of subcontract (\$650K TC, 25% of total).
- CDC/VA, IPA contract (\$200K TC) Sept 2011 – Aug 2018  
*The Respiratory Protection Effectiveness Clinical Trial (The ResPECT Study).*  
 PIs of ResPECT: Trish Perl (Johns Hopkins) and Lew Radonovich (Gainesville VA).  
 PI of subcontract to VA: Reich. He serves as the Senior Biostatistician for this cluster-randomized trial.
- NSF, PESO (\$590K TC) Sept 2012 – Aug 2015  
*Materials and Multivariable Models to Predict Tissue Tropism in Metastasis.*  
 PI: Shelly Peyton, co-PI: Reich. Reich responsible for 100% of the statistical modeling effort (10% of award).
- NIH, R21 research grant (\$390K TC) Aug 2012 - May 2014  
*Premenstrual syndrome and subsequent hypertension.*  
 PI: Dr. Elizabeth Bertone-Johnson. co-I: Reich.

## CLASSROOM INSTRUCTION

- Categorical Data Analysis (BIOSTATS 743)  
 Fall '17, '18 Graduate-level course (3 credits). [\[course website\]](#)
- Biostat Methods 2: Applied Regression Modeling (BIOSTATS 690NR)  
 Spring '14 - '16 Graduate-level course in linear regression (3 credits). Core requirement for Biostatistics graduate students. [\[course website\]](#)
- Telling Stories with Data: Statistics, Modeling, and Visualization (PUBHLTH 490ST)  
 Spr '16, Undergraduate-level course in linear regression and data visualization (3 credits).  
 Fall '16-'18 [\[course website\]](#)



## Introduction to Statistical Computing using R (BIOSTATS 597D)

Fall 2014 Graduate introductory course in statistical computing (1 credit).

## Introduction to Statistical Computing and Data Visualization (BIOSTATS 590F)

Fall 2012 Sponsored by the Open Education Initiative at UMass, this course was being designed to introduce upper-level undergraduate and graduate students to the world of open-source computing for public health and other scientific research. This course was taught as a hands-on, project-based data analysis workshop.

## STUDENT MENTORSHIP & ADVISING

### Post-doctoral fellows

Tom McAndrew, 2018-present

Alexandria Brown, 2015-2018

Evan Ray, 2015-2017

Krzysztof Sakrejda, 2015-2017

### PhD student advisees

Stephen Lauer, Biostatistics PhD, 2014-2019

Xi Meng, Biostatistics PhD, 2015-present

Graham Casey Gibson, Biostatistics PhD, 2017-present

Nutcha Wattanachit, Biostatistics PhD, 2018-present

### MS thesis advisees

Justin Baldwin, Biostatistics MS, 2016-2017

Coco Kusiak, Biostatistics MS, 2017-2018

### Undergraduate Honors thesis advisees

Kristina Yamkovoy, 2017-2018

### MS and PhD thesis committees

Jonviea Chamberlain, Epidemiology MS, 2011-2012

Nikki Nixon, Epidemiology MS, 2012-2013

Vicki McLaughlin, Epidemiology PhD, 2012-2014

Eric Cohen, Biostatistics MS, 2013-2014

Charlie Curtsinger, Computer Science PhD, 2014-2016

Mark Hagemann, Civil and Environmental Engineering PhD, 2015-2016

Alex Bogdan, Biostatistics MS, 2016

David Arbour, Computer Science PhD, 2015-present

Sangsoo Park, Kinesiology PhD, 2015-present

Sra Sontisirikit, Computer Science, Asian Institute of Technology, 2015-present (role: expert advisor)

### Graduate research assistants

Guoshu Yuan (2012-2013), Emily Ramos (fall 2014), Sangsoo Park (summer 2014), Krzysztof Sakrejda (2014-2015), Xi Meng (2015-present), Stephen Lauer (2013-present).

### [statsTeachR.org](https://statsTeachR.org) curriculum developers (2013-2014)

Eric Cohen, Harrel Blatt, Eric Reed, Sara Nuñez, Emily Ramos.

### Undergraduate research assistants

Eric Doty (Spring 2012), Courtney Yannace (Fall 2014), Harley Jean (Summer 2016 - Spring 2017), Evan

Moore (Spring 2018), Justin Stott (Spring 2019).

### **Undergraduate Interns**

Summer 2017 Lily Rithichoo (Mt Holyoke)  
Winter 2017 Jordan Aron, Dean Gladish, Will Thomspson (Carleton College)  
Summer 2018 Rebecca Silva (Amherst College), Willow Crawford-Crudell (Smith College), Dean Gladish (Carleton College)

## **WORKSHOPS & DATAFESTS**

Five College DataFest (Amherst, MA)  
2014-19 UMass team coordinator: responsible for recruiting teams of undergraduate students to compete in weekend-long data competition. [ [datafest website](#) ]

HackHer413 (Amherst, MA)  
February 2019 Data Science Judge for all women and non-binary student hackathon. [ [website](#) ]

HackEbola (UMass-Amherst)  
November 2014 Co-organized three-day [HackEbola hackathon/datafest](#) at UMass with Graduate Researchers interested in Data student group.

Data Sciences for the Life Sciences in a High Performance Computing Environment (Holyoke, MA)  
February 2014 Directed and taught a one-day hands-on high-performance statistical computing workshop for researchers. Workshop held at the [MGHPCC](#).

Data Analysis and Visualization using R, Social and Demographic Research Institute (UMass)  
July 2012 Designed and taught a two-day hands-on data analysis workshop for researchers.

Outbreak investigation workshops, Thai Ministry of Public Health (Bangkok, Thailand)  
March 2009 and March 2012 Designed and taught a three-day workshop on statistical modeling of outbreaks for field epidemiologists with Justin Lessler from the Johns Hopkins Epidemiology Dept. The workshop was sponsored by the NIH Fogarty International Center.

## **SOFTWARE & COMPUTING**

General software development from Reich Lab: see [lab webpage](#).

R package development: [coarseDataTools](#) and [clusterPower](#), R packages (available on CRAN)

Open source teaching curricula: Co-founder of [statsTeachR.org](#)



## PRESS

- "Under The Weather? New Flu 'Forecast' Aims To Predict Activity" *NEPR*. 28 Jan 2019.
- "Flu season escalating earlier than normal" *WCVB (TV interview)*. 10 Jan 2018.
- "UMass researcher helps predict the timing and the peak of the flu" *Boston Globe*. 2 Jan 2018.
- "Letter to editor: critical of measles headline for down-playing risks" *Daily Hampshire Gazette*. 11 Feb 2015.
- "Flu Season Made Easy With New Tool." *New England Public Radio*. 24 Nov 2014.
- "HackEbola at UMass aids fight against West African epidemic " *Daily Hampshire Gazette*. 22 Nov 2014.
- "Understanding the Protective Side of Dengue Virus." *New York Times*. 9 July 2013.

## INVITED TALKS

1. "Collaborative Influenza Forecasting in the US." 7th Annual Conference to Increase Diversity in Mathematical Modeling and Public Health, Harvard University, Boston, MA. 30 November 2018.
2. "Forecasting infectious disease epidemics via weighted density ensembles." ZüKoSt: Seminar on Applied Statistics, ETH Zürich, Switzerland. 17 May 2018.
3. "Forecasting infectious disease epidemics via weighted density ensembles." LMU Statistics Colloquium, Munich, Germany. 14 May 2018.
4. "Building a Collaborative Ensemble to Forecast Influenza in the US." MIDAS Network Meetings, Bethesda, MD. 3 April 2018.
5. "Forecasting Infectious Disease Transmission." Symposium on the Population Biology of Vector-borne Diseases, Center for the Ecology of Infectious Diseases, University of Georgia, Athens, GA. 24 February 2018.
6. "Algorithm Soup: Improving Influenza Forecasting in the US using Ensemble Learning." COBRE Center for Computational Biology of Human Disease Seminar Series, Brown University, Providence, RI. 24 January 2018.
7. "Collaborative Influenza Forecasting in the U.S." WHO Influenza Incidence Analytics Group. Virtual presentation. 20 December 2017.
8. "Comparison of ensemble methods for forecasting influenza in the United States." Epidemics6 Conference, Barcelona, Spain. 28 November 2017.
9. "Forecasting Infectious Disease Outbreaks." UMass Molecular and Cellular Biology Seminar Series, Amherst, MA. 31 October 2017.
10. "Forecasting Infectious Disease Outbreaks via Weighted Density Ensembles." Yale Public Health Modeling Concentration Seminar Series, New Haven, CT. 2 October 2017.
11. "Building a Collaborative Ensemble to Forecast Influenza in the US." CDC, Atlanta, GA. 29 August 2017.
12. "Prediction of Infectious Disease Epidemics via Weighted Density Ensembles." MIDAS Network Meetings, Atlanta, GA. May 2017.
13. "Analytical approaches for illuminating Zika and Dengue transmission dynamics." CDC Dengue Branch, San Juan, Puerto Rico. 24 February 2017.
14. "Real-time Prediction of Infectious Disease Outbreaks." Johns Hopkins Biostatistics Seminar Series, Baltimore, MD. 3 October 2016.
15. "New Approaches for Predicting Outbreaks." Pandemic Prediction and Forecasting Working Group, White House Office of Science and Technology Policy, Washington DC. 9 February 2016.

16. "Estimating Population Susceptibility in Dynamic Models of Infectious Disease." Boston University Biostatistics Seminar Series, Boston, MA. 14 May 2015.
17. "Estimating Population Susceptibility in Dynamic Models of Infectious Disease." New England Statistics Symposium. University of Connecticut, Storrs, CT. 25 April 2015.
18. **Keynote address:** "Predicting Dengue Fever Outbreaks in Thailand." Massachusetts Undergraduate Research Conference. Amherst, MA. 24 April 2015.
19. "Estimating Population Susceptibility in Dynamic Models of Infectious Disease." Computational Social Science Institute Seminar Series, UMass-Amherst. Amherst, MA. 17 April 2015.
20. "Statistical Challenges in Real-Time Infectious Disease Forecasting." Quantitative Methods Core Methods Seminar, UMass-Worcester Medical School. Worcester, MA. 7 April 2015.
21. "statsTeachR: Open Resources for Teaching Statistics." New England Statistics Symposium. Boston, MA. 26 April 2014.
22. "Open Resources for Teaching Statistics." Department of Mathematics and Statistics, University of Massachusetts. Amherst, MA. 7 April 2014.
23. "Estimating case fatality ratios from infectious disease surveillance data." American Public Health Association Annual Conference. Boston, MA. 4 November 2013.
24. "Estimating case fatality ratios from infectious disease surveillance data." Joint Conference by the International Chinese Statistical Association and the International Society for Biopharmaceutical Statistics (ICSA-ISBS), Washington DC. 10 June 2013.
25. "Social coding with RStudio and GitHub." Pioneer Valley and Five College R Statistical Meetup. 13 February 2013.
26. "Drawing inference about interactions between pathogens in infectious disease systems." Department of Mathematics and Statistics, University of Massachusetts. 26 March 2012.
27. "Making inferences about infection using the incubation period." Center for Quality of Care Research, Baystate Medical Center. Springfield, MA. 16 November 2011.
28. "Making inferences about infection using the incubation period." Department of Epidemiology and Public Health Seminar Series, University of Maryland. 21 April 2011.

## **GRANT REVIEW ACTIVITIES**

### **NIH ad hoc Study Section and Council Member**

- 2017 NIGMS Advisory Council
- 2016 Infectious, Reproductive, Asthma and Pulmonary Conditions Study Section (IRAP)
- 2015 NEI Clinical and Epidemiological Applications: Uveitis, Cornea and Refractive Error

### **Medical Research Council UK Peer Reviewer**

- 2016 Review of a single application.

## **MEMBERSHIPS**

2017- New England Statistical Society  
 2014- Foundation for Open Access Statistics  
 2014- American Society for Tropical Medicine and Hygiene  
 2011- UMass Center for Clinical and Translational Science  
 2008- American Statistical Association  
 2008- International Biometric Society (ENAR)

## EDITORIAL ACTIVITIES

**Founding Editor**, *PLOS Disease Forecasting and Surveillance Channel*, 2017-present

**Statistical Advisory Board Member**, *PLOS Medicine*, 2016-2017

**Review Board Member**, *PLOS Currents: Outbreaks*, 2015-2018

**Editorial Board Member**, *PLOS ONE*, 2013-2017

**Guest Editor**, *PLOS Neglected Tropical Diseases*, 2016.

### Reviewer

*Biostatistics*  
*Statistics in Medicine*  
*American Statistician*  
*American Journal of Epidemiology*  
*PLOS Medicine*  
*PLOS Computational Biology*  
*The Lancet Infectious Diseases*  
*Epidemiology*  
*British Medical Journal*  
*PLoS Currents: Outbreaks*  
*Epidemics*  
*American Journal of Tropical Medicine and Hygiene*  
*Clinical Trials*  
*PeerJ*  
*Emerging Infectious Diseases*  
*Proceedings of the Royal Society B: Biological Sciences*  
*BMC Public Health*  
*PLOS ONE*  
*Scientific Reports*  
*Demography*  
*Medical Decision Making*  
*Influenza and Other Respiratory Viruses*  
*Environmental Health*  
*International Journal of Health Geographics*

## SERVICE

### Faculty Searches

2013-2014 Member, Assistant Lecturer Search Committee  
 2014-2015 Member, Open-rank Tenure Track Search Committee  
 2014-2015 Chair, Assistant/Associate Tenure Track Search Committee  
 2016-2017 Member, Assistant Professor Tenure Track Search Committee  
 2017-2018 Member, Institute for Applied Life Sciences, Assistant Professor for Large Data Analytics  
 2017-2018 Member, Biostatistics and Epidemiology Department Chair Search Committee  
 2018-2019 Member, Assistant Professor Tenure Track Search Committee, Biostatistics

**Department of Biostatistics and Epidemiology, UMass School of Public Health and Health Sciences**

- 2011-2012 Co-organizer for Department's seminar series
- 2012-2013 Co-organizer for Department's seminar series  
Chair, Biostatistics Curriculum Committee
- 2013-2014 Member, Biostatistics Curriculum Committee  
Chair, Biostatistics Admissions and Student Outreach Committee  
Representative, Five College Statistics Program
- 2014-2015 Member, Biostatistics Curriculum Committee  
Member, Biostatistics Admissions and Student Outreach Committee  
Representative, Five College Statistics Program
- 2015-2016 Chair, Biostatistics Curriculum Committee  
Member, Biostatistics Admissions and Student Outreach Committee  
Chair, Biostatistics Accelerated MS program  
Representative, Five College Statistics Program
- 2016-2017 Member, Biostatistics Curriculum Committee  
Chair, Biostatistics Admissions and Student Outreach Committee  
Chair, Biostatistics Accelerated MS program  
Representative, Five College Statistics Program
- 2017-2018 Member, Biostatistics Curriculum Committee  
Member, Biostatistics Admissions and Student Outreach Committee  
Chair, Biostatistics Accelerated MS program  
Representative, Five College Statistics Program
- 2018-2019 Chair, Biostatistics Admissions and Student Outreach Committee  
Chair, Biostatistics Accelerated MS program  
Member, Biostatistics Graduate Program Coordination Committee  
Representative, Five College Statistics Program

**UMass School of Public Health and Health Sciences and campus-wide service**

- 2014-2015 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group
- 2015-2016 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group  
Member, UMass IT Strategic Planning Research Committee  
Member, ad hoc Computing committee
- 2015-2016 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group  
Member, ad hoc Computing committee
- 2017-2018 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group  
Member, School Personnel Committee
- 2018-2019 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group  
Member, School Personnel Committee

**Other Professional Service**

- 2013-2014 Co-organizer, Western Mass Data Science, Stats, and R Meetup  
Chair, Biostatistics Admissions and Student Outreach Committee  
UMass Biostatistics representative, Five College Statistics Program  
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2014-2015 Organizer, Western Mass Data Science, Stats, and R Meetup  
Member, Biostatistics Admissions and Student Outreach Committee  
UMass Biostatistics representative, Five College Statistics Program  
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2015-2016 Organizer, Western Mass Data Science, Stats, and R Meetup  
Member, Biostatistics Admissions and Student Outreach Committee  
Chair, Biostatistics Accelerated MS program  
UMass Biostatistics representative, Five College Statistics Program  
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2016-2017 Organizer, Western Mass Data Science, Stats, and R Meetup  
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2017-2018 Organizer, Western Mass Data Science, Stats, and R Meetup  
Secretary and Treasurer, Five College Statistics Program  
Vice President for Scientific Program, New England Statistical Society  
Organizing Committee, 2018 New England Statistical Symposium  
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)  
Steering Committee Member, NIH MIDAS Network
- 2018-2019 Organizer, Western Mass Data Science, Stats, and R Meetup  
Chair, Five College Statistics Program  
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)  
Steering Committee Member, NIH MIDAS Network