

Personal Information

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Education

<u>Institution</u>	<u>Degree</u>	<u>Date Conferred</u>	<u>Major</u>
University of California-San Francisco	Postdoctoral Fellowship	Aug. 2005	Neurology
Stanford University	PhD	Jan. 2005	Statistics
Stanford University	MS	Sept. 2004	Biology
Stanford University	MS	June 2002	Statistics
Utah State University	BS	June 1998	Mathematics/Statistics

Professional Experience

Academic Appointments

- 2015-present Research Associate Professor, Endodontics
University of North Carolina-Chapel Hill
- 2015-present Research Associate Professor, Biostatistics
University of North Carolina-Chapel Hill
- 2010-2015 Research Assistant Professor, Biostatistics
University of North Carolina-Chapel Hill
- 2007-2015 Research Assistant Professor, Endodontics
University of North Carolina-Chapel Hill

Non-Academic Experience

- 2005-2006 Biostatistician, Theranos

Honors and Awards

Bibliography

Journal Articles (Refereed)

1. Prashant Verma, Ali Nosrat, Jong Kim, Jeffery Price, Ping Wang, **Eric Bair**, Hockin Xu, Ashraf Fouad (2016). The Effect of Residual Bacteria on the Outcome of Pulp Regeneration in vivo. *Journal of Dental Research*. In press.
2. Gary D. Slade, Richard Ohrbach, Joel D. Greenspan, Roger B. Fillingim, **Eric Bair**, Anne E. Sanders, Ronald Dubner, Luda Diatchenko, Carolina B. Meloto, Shad Smith, William Maixner (2016). Painful Temporomandibular Disorder: Decade of Discovery from OPPERA Studies. *Journal of Dental Research*. 95(10): 1084-1092.
3. Anne E. Sanders, Aderonke A. Akinkugbe, **Eric Bair**, Roger B. Fillingim, Joel D. Greenspan, Richard Ohrbach, Ronald Dubner, William Maixner, Gary D. Slade (2016). Subjective Sleep Quality Deteriorates Prior to Development of Painful Temporomandibular Disorder. *Journal of Pain*. 17(6): 669-677.
4. **Eric Bair**, Sheila Gaynor, Gary D. Slade, Richard Ohrbach, Roger B. Fillingim, Joel D. Greenspan, Ronald Dubner, Shad B. Smith, Luda Diatchenko, William Maixner (2016). Identification of Clusters of Individuals Relevant to Temporomandibular Disorders and Other Chronic Pain Conditions: The OPPERA Study. *Pain*. 157(6): 1266-1278.
5. Carolina B. Meloto, Andrey Bortsov, **Eric Bair**, Erika Helgeson, Cara Ostrom, Shad Smith, Ronald Dubner, Gary D. Slade, Roger B. Fillingim, Joel D. Greenspan, Richard Ohrbach, William Maixner, Samuel McLean, Luda Diatchenko (2016). Modification of COMT-dependent pain sensitivity by psychological stress and sex. *Pain*. 157(4): 858-867.
6. Ryan J. Bair, **Eric Bair**, Akila N. Viswanathan (2015). A radiopaque polymer hydrogel used as a fiducial marker in gynecologic-cancer patients receiving brachytherapy. *Brachytherapy*. 14(6): 876-880.
7. Naomi Brownstein, Jianwen Cai, Gary D. Slade, **Eric Bair** (2015). Parameter estimation in Cox models with missing failure indicators and the OPPERA study. *Statistics in Medicine*. 34(30): 3984-3996.
8. Brittney P. Ciszek, Asma A. Khan, Hong Dang, Gary D. Slade, Shad Smith, **Eric Bair**, William Maixner, Denniz Zolnoun, Andrea G. Nackley (2015). MicroRNA expression profiles differentiate chronic pain condition subtypes. *Translational Research*. 166(6): 706-720.
9. Gary D. Slade, Anne E. Sanders, Richard Ohrbach, Ron Dubner, **Eric Bair**, William Maixner, Joel D. Greenspan, Roger B. Fillingim, Shad Smith, Luda Diatchenko (2015). COMT diplotype amplifies effect of stress on risk of temporomandibular pain. *Journal of Dental Research*. 94(9): 1187-1195.
10. Elizabeth Applebaum, Andrea G. Nackley, **Eric Bair**, William Maixner, Asma A. Khan (2015). Phenotypic, Physiologic, and Genetic Factors the Contribute to Post-treatment Pain Among Endodontic Patients. *Journal of Endodontics*. 41(8): 1214-1218.
11. Mi-Kyung Song, Sandra E. Ward, **Eric Bair**, Lia Weiner, Jessica C. Bridgman, Gerald A. Hladik, Constance A. Gilet (2015). Patient-reported cognitive functioning and daily functioning in chronic dialysis patients. *Hemodialysis International*. 19(1): 90-99.
12. **Eric Bair**, Elizabeth Simmons, Jessica Hartung, Kinnari Desia, William Maixner, Denniz Zolnoun (2015). Natural History of Comorbid Orofacial Pain Among Women with Vestibulodynia. *Clinical Journal of Pain*. 31(1): 73-78.
13. Gary D. Slade, Anne E. Sanders, Richard Ohrbach, Roger B. Fillingim, Ron Dubner, Richard H. Gracely, **Eric Bair**, William Maixner, Joel D. Greenspan (2014). Pressure pain thresholds

fluctuate with, but do not usefully predict, the clinical course of painful temporomandibular disorder. *Pain*. 155(10): 2134-2143.

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16. Ryan Phillips, Lisa Daily, **Eric Bair**, James Samet, Nancy Allbritton (2014). Ex Vivo Chemical Cytometric Analysis of Protein Tyrosine Phosphatase Activity in Single Human Airway Epithelial Cells. *Analytical Chemistry*. 86(2): 1291-1297.
17. Erin Carey, Caitlin Martin, Matthew Siedhoff, **Eric Bair**, Sawsan As-Sanie (2014). Biopsychosocial correlates of persistent postsurgical pain in women with endometriosis. *International Journal of Gynecology and Obstetrics*. 124(2): 169-173.
18. Samuel A. McLean, Jacob C. Ulirsch, Gary D. Slade, April C. Soward, Robert A. Swor, David A. Peak, Jeffrey S. Jones, Niels K. Rathlev, David C. Lee, Robert M. Domeier, Phyllis L. Hendry, Andrey V. Bortsov, **Eric Bair** (2014). Incidence and predictors of neck and widespread pain after motor vehicle collision among U.S. litigants and non-litigants. *Pain*. 155(2): 309-321.
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20. **Eric Bair**, Naomi Brownstein, Richard Ohrbach, Joel Greenspan, Ron Dubner, Roger Fillingim, William Maixner, Shad Smith, Luda Diatchenko, Yoly Gonzalez, Sharon Gordon, Pei-Feng Lim, Margarete Ribeiro-Dasilva, Dawn Dampier, Charles Knott, Gary D. Slade (2013). Study protocol, sample characteristics and loss-to-follow-up: the OPPERA prospective cohort study. *Journal of Pain*. 14(12 SUPPL): T2-T19.
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22. Richard Ohrbach, **Eric Bair**, Roger B. Fillingim, Yoly Gonzalez, Sharon M. Gordon, Pei-Feng Lim, Margarete Ribeiro-Dasilva, Luda Diatchenko, Ron Dubner, Joel Greenspan, Charles Knott, William Maixner, Shad Smith, Gary D. Slade (2013). Clinical orofacial characteristics associated with risk of first-onset TMD: the OPPERA prospective cohort study. *Journal of Pain*. 14(12 SUPPL): T33-T50.
23. Anne Sanders, Gary D. Slade, **Eric Bair**, Roger Fillingim, Charles Knott, Ron Dubner, Joel Greenspan, William Maixner, Richard Ohrbach (2013). General health status and incidence of first-onset temporomandibular disorder: the OPPERA prospective cohort study. *Journal of Pain*. 14(12 SUPPL): T51-T62.
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- study. *Journal of Pain*. 14(12 SUPPL): T75-T90.
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 37. Gary D. Slade, Anne E. Sanders, **Eric Bair**, Naomi Brownstein, Dawn Dampier, Charles Knott, Roger Fillingim, William Maixner, Shad Smith, Joel Greenspan, Ron Dubner, and Richard Ohrbach (2013). Preclinical episodes of orofacial pain symptoms and their association with healthcare behaviors in the OPPERA prospective cohort study. *Pain*. 154(5): 750-760.
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- (2012). Reliability and reproducibility of novel methodology for assessment of pressure pain sensitivity in pelvis. *Journal of Pain*. 13(9): 910-920.
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 43. Roger B. Fillingim, Richard Ohrbach, Joel D. Greenspan, Charles Knott, Ron Dubner, **Eric Bair**, Cristina Baraian, Gary D. Slade, William Maixner (2011). Potential psychosocial risk factors for chronic TMD: Descriptive data and empirically identified domains from the OPPERA case-control study. *Journal of Pain*. 12(11 SUPPL.): T46-T60.
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 48. Christopher R. Cabanski, Yuan Qi, Xiaoying Yin, **Eric Bair**, Michele C. Hayward, Cheng Fan, Jianying Li, Matthew D. Wilkerson, J. S. Marron, Charles M. Perou, D. Neil Hayes (2009). SWISS MADE: standardized within class sum of squares to evaluate methodologies and dataset elements. *PLoS ONE*. 5(3): e9905.
 49. Debashis Paul, **Eric Bair**, Trevor Hastie, Robert Tibshirani (2008). Pre-conditioning for feature selection and regression in high-dimensional problems. *Annals of Statistics*. 36(4): 1595-1618.
 50. Jacques Lapointe, Sameer Malhotra, John P. Higgins, **Eric Bair**, Maxwell Thompson, Keyan Salari, Craig P. Giacomini, Michelle Ferrari, Kelli Montgomery, Robert Tibshirani, Matt van de Rijn, James D. Brooks, Jonathan R. Pollack (2008). hCAP-D3 expression marks a prostate cancer subtype with favorable clinical behavior and androgen signaling signature. *The American Journal of Surgical Pathology*. 32(2): 205-209.
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- Tibshirani, Hartmut Doehner, Jonathan R. Pollack (2004). Class discovery and outcome prediction in adult acute myeloid leukemia based on gene expression profiling. *The New England Journal of Medicine*. 350(16): 1605-1616.
55. Jacques Lapointe, Chunde Li, Matt van de Rijn, John P. Huggins, **Eric Bair**, Kelli Montgomery, Michelle Ferrari, Walter Rayford, Peter Ekman, Angelo M. DeMarzo, Robert Tibshirani, David Botstein, Patrick O. Brown, James D. Brooks, Jonathan R. Pollack (2004). Gene expression profiling identifies clinically relevant subtypes of prostate cancer. *Proceedings of the National Academy of Sciences*. 101(3): 811-816.
 56. **Eric Bair**, Robert Tibshirani (2003). Machine learning methods applied to DNA microarray data can improve the diagnosis of cancer. *SIGKDD Explorations*. 5(2): 29-36.
 57. Michael R. Shirts, **Eric Bair**, Giles Hooker, Vijay S. Pande (2003). Equilibrium free energies from nonequilibrium measurements using maximum-likelihood methods. *Physical Review Letters*. 91(14): 140601.
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Journal Abstracts (Refereed)

1. Richard Ohrbach, Roger Fillingim, **Eric Bair**, Nuvan Rathnayaka, Joel Greenspan, Luda Diatchenko, Ronald Dubner, William Maixner, Gary Slade (2016). TMD Risk Prediction is Enhanced Using Temporally Dynamic Risk Factors. *Journal of Dental Research* 95(Special Issue B): 98.
2. Gary D. Slade, Richard Ohrbach, Luda Diatchenko, Joel Greenspan, **Eric Bair**, William Maixner, Roger Fillingim (2015). Somatic Sensations, Not Sensory Reactivity, Predict TMD Onset and Persistence. *Journal of Dental Research* 94(Special Issue A): 152.
3. Pei F. Lim, Gary D. Slade, Richard Ohrbach, Roger B. Fillingim, Ronald Dubner, Joel Greenspan, Luda Diatchenko, William Maixner, Marta Gama, Maisa Gui, **Eric Bair** (2015). Widespread Palpation Tenderness and Temporomandibular Disorders: The OPPERA Study. *Journal of Dental Research* 94(Special Issue A): 153.
4. Richard Ohrbach, Sonia Sharma, Jean Wactawski-Wende, **Eric Bair**, Roger Fillingim, Joel Greenspan, Luda Diatchenko, William Maixner, Gary D. Slade (2015). Trauma and TMD Onset: Descriptive Characteristics from the OPPERA Study. *Journal of Dental Research* 94(Special Issue A): 154.
5. Sonia Sharma, Gary D. Slade, Jean Wactawski-Wende, **Eric Bair**, Roger Fillingim, Joel Greenspan, Luda Diatchenko, William Maixner, Richard Ohrbach (2015). Jaw Injury Predicts TMD Onset: Predictive Models from OPPERA Study. *Journal of Dental Research* 94(Special Issue A): 155.
6. Vanessa Miller, Gary D. Slade, Anne E. Sanders, Roger B. Fillingim, Joel Greenspan, Richard Ohrbach, **Eric Bair**, Luda Diatchenko, William Maixner (2015). Chronic Temporomandibular Disorder and Smoking: The OPPERA Case Control Study. *Journal of Dental Research* 94(Special Issue A): 2882.
7. Shad Smith, **Eric Bair**, Gary D. Slade, Cara Ostrom, Erika Helgeson, Roger Fillingim, Joel Greenspan, Richard Ohrbach, Ron Dubner, William Maixner, Luda Diatchenko (2015). Female-specific effects of a serotonin 2A receptor (HTR2A) genetic variant on TMD pain and psychological phenotypes. *Journal of Pain* 16(4): S43.

8. Shad Smith, **Eric Bair**, Wei Xue, Gary D. Slade, Ronald Dubner, Roger B. Fillingim, Joel D. Greenspan, Richard Ohrbach, Charlie Knott, Luda Diatchenko, William Maixner (2014). Association between INADL genetic variant and a subgroup with high risk for TMD in the OPPERA study. *Molecular Pain* 10(Suppl. 1): P5.
9. Ryan Bair, Nicole Cimbak, C. Wakefield, **Eric Bair**, Akila N. Viswanathan (2014). Radiopaque Polymer Hydrogel Used as a Fiducial Marker in Gynecologic Brachytherapy. *International Journal of Radiation Oncology * Biology * Physics* 90(1): S505.
10. Ahmed Chaudhary, Ryan J. Bair, **Eric D. Bair**, Julien Partouche, Mary Witt, Victoria M. Villaflor, Ezra E. Cohen, Tanguy Y. Seiwert, Everett E. Vokes, Daniel J. Haraf (2014). Trismus After Chemoradiation Therapy for Locoregionally Advanced Head and Neck Cancer: A Prospective Study of the Dose Effect Relationship in Accelerated Fractionation by Concomitant Boost With Cisplatin and Cetuximab From the EPIC Trial. *International Journal of Radiation Oncology * Biology * Physics* 90(1): S572-S573.
11. Ahmed Chaudhary, Ryan J. Bair, **Eric D. Bair**, Julien Partouche, Mary Witt, Victoria M. Villaflor, Ezra E. Cohen, Tanguy Y. Seiwert, Everett E. Vokes, Daniel J. Haraf (2014). Mandibular Osteoradionecrosis After Chemoradiation Therapy for Locoregionally Advanced Head-and-Neck Cancer: A Prospective Study of the Dose–Effect Relationship in Accelerated Fractionation by Concomitant Boost With Cisplatin and Cetuximab From the EPIC Trial. *International Journal of Radiation Oncology * Biology * Physics* 88(2): 478-479.
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16. Gary D. Slade, Anne Sanders, **Eric Bair**, Shad Smith, William Maixner, Charles Knott, Richard Ohrbach, Roger B. Fillingim, Ron Dubner, Joel D. Greenspan (2013). Pressure-pain Hypersensitivity Coincides With But Does Not Predict TMD Onset. *Journal of Dental Research* 92(Special Issue A): 1709.
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21. Gary Slade, Richard Ohrbach, **Eric Bair**, Roger Fillingim, Joel Greenspan, Ron Dubner, Luda Diatchenko, William Maixner (2012). Sociodemographic Predictors of First-onset TMD: the OPPERA Prospective Cohort Study. *Journal of Dental Research* 91(Special Issue B): 3073.
22. Richard Ohrbach, Gary Slade, **Eric Bair**, Roger Fillingim, Joel Greenspan, Ron Dubner, Luda Diatchenko, William Maixner (2012). Temporomandibular-specific and Health Status Predictors of First-onset TMD: OPPERA Study. *Journal of Dental Research* 91(Special Issue B): 3074.
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28. Jacques Lapointe, Sameer Malhotra, John P. Higgins, Matt Van de Rijn, **Eric Bair**, Kelli Montgomery, Michelle Ferrari, Patrick O. Brown, James D. Brooks, Jonathan R. Pollack (2005). Prognostic relevance of expression profiling-based prostate cancer subtypes. *Proceedings of the American Association for Cancer Research* 46: 102b.
29. Lars Bullinger, Claudia Scholl, **Eric Bair**, Konstanze Doehner, Stefan Froehling, Richard F. Schlenk, Robert Tibshirani, Hartmut Doehner, Jonathan R. Pollack (2004). Identification of Distinct inv (16) Subclasses in Adult Acute Myeloid Leukemia Based on Gene Expression Profiling. *Blood* 104(11): 2037.
30. Jacques Lapointe, Chunde Li, John P. Higgins, Matt Van de Rijn, **Eric Bair**, Kelli Montgomery, Michelle Ferrari, Peter Ekman, Angelo M. Demarzo, Robert Tibshirani, David Botstein, Patrick O. Brown, James D. Brooks, Jonathan R. Pollack (2004). A molecular classification of prostate cancer based on patterns of gene expression. *Proceedings of the American Association for Cancer Research* 45: 234-235.
31. Lars Bullinger, Konstanze Doehner, **Eric Bair**, Stefan Froehling, Richard F. Schlenk, Robert Tibshirani, Hartmut Doehner, Jonathan R. Pollack (2003). Identification of new subclasses in

- adult acute myeloid leukemia based on gene expression profiling. *Blood* 102(11): 366A.
32. Lars Bullinger, Konstanze Doehner, **Eric Bair**, Stefan Froehling, Richard F. Schlenk, Robert Tibshirani, Hartmut Doehner, Jonathan R. Pollack (2003). Gene expression based outcome prediction in adult acute myeloid leukemia. *Blood* 102(11): 370A.

Presentations (Oral/Poster without Published Abstracts)

1. Erika Helgeson, **Eric Bair**, A General Unimodal Null Distribution with Applications to Cluster Significance Testing, Eastern North American Region of the International Biometric Society (2016)
2. Naomi C. Brownstein, Wei Xue, Jianwen Cai, **Eric Bair**, Modeling Secondary Phenotypes Conditional on Genotypes in Case-Control Studies, Eastern North American Region of the International Biometric Society (2016)
3. Wei Xue, **Eric Bair**, Permutation-Based Test Statistics for Intermediate Phenotypes in Genome-Wide Association Studies, Eastern North American Region of the International Biometric Society (2015)
4. Naomi C. Brownstein, Xibei Dang, **Eric Bair**, Nicolas L. Young, Quantifying Uncertainty in the Identification of Proteins, Post-Translational Modifications (PTMs) and Proteoforms, Eastern North American Region of the International Biometric Society (2015)
5. Erika S. Helgeson, **Eric Bair**, Testing for the Presence of Clustering, Eastern North American Region of the International Biometric Society (2015)
6. Qian Liu, Guanhua Chen, Michael Kosorok, **Eric Bair**, Biclustering via Sparse Clustering, Joint Statistical Meeting (2014)
7. **Eric Bair**, Sheila Gaynor, Luda Diatchenko, Gary Slade, Shad Smith, Roger Fillingim, Joel Greenspan, Ron Dubner, Richard Ohrbach, William Maixner, Identification of TMD Subtypes: The OPPERA Study, NIH Annual Pain Consortium Symposium (2014)
8. **Eric Bair**, Lira Pi (2014). Random Forest Importance Scores: Significance Testing and Conditional Importance, Eastern North American Region of the International Biometric Society (2014)
9. Sheila Gaynor, **Eric Bair**, Identification of Biologically Relevant Subtypes via Preweighted Sparse Clustering, Eastern North American Region of the International Biometric Society (2014)
10. Qian Liu, **Eric Bair**, Biclustering via Sparse Clustering, Eastern North American Region of the International Biometric Society (2014)
11. **Eric Bair**, Ellen Mir, Kathy Gardiner, Jasmine Lewis, Anitha Muddana, Gary Slade, William Maixner, Denniz Zolnoun, Experimental Pain Sensitivity and Psychological Distress in Vulvodynia Patients, International Pelvic Pain Society (2013)
12. Brittney Ciszek, **Eric Bair**, Asma Khan, Andrea Nackley, Anitha Muddana, Denniz Zolnoun, Biomolecular Correlates of a Persistent Pain Disorder: Vestibulodynia, International Pelvic Pain Society (2013)
13. Giovana Fernandes, Ana Lúcia Franco, José Tadeu Tesseroli de Siqueira, Daniela Aparecida de Godoi Gonçalves, **Eric Bair**, Cinara Maria Camparis (2013). Prevalência de Disfunção Temporomandibular dolorosa em adolescentes: associação com auto-relato de bruxismo do sono, apertamento diurno, outros hábitos parafuncionais e dor ao acordar. Interdisciplinary Pain Congress of the University of Sao Paulo (2013)
14. Linda T. Chan, Sheng Zhong, Afsar R. Naqvi, Jezrom Self-Fordham, **Eric Bair**, Salvador Nares, Asma Khan, MicroRNAs: New Insights Into the Pathogenesis of Endodontic Periapical Disease, American Association of Endodontists (2013)
15. Naomi Brownstein, Jianwen Cai, Gary Slade, Shad Smith, Luda Diatchenko, **Eric Bair**,

- Bootstrap Methods for Association Analysis on Intermediate Phenotypes in Case-Control Studies, Eastern North American Region of the International Biometric Society (2013)
16. Sheila Gaynor, **Eric Bair**, Identification of Biologically Relevant Subtypes via Prewighted Sparse Clustering, Eastern North American Region of the International Biometric Society (2013)
 17. Erika Helgeson, Gary Slade, Richard Ohrbach, Roger Fillingim, Joel Greenspan, Ron Dubner, William Maixner, **Eric Bair**, Lasso-Based Methodology for Questionnaire Design Applied to the OPPERA Study, Eastern North American Region of the International Biometric Society (2013)
 18. Qian Liu, **Eric Bair**, Biclustering via Sparse Clustering, Eastern North American Region of the International Biometric Society (2013)
 19. Erin T. Carey, Denniz Zolnoun, Gary Slade, Richard Ohrbach, Flora Mulkey, Naomi Brownstein, Victoria Nneji, Ron Dubner, Joel Greenspan, Roger Fillingim, William Maixner, **Eric Bair**, Associations Between Gynecological Characteristics and Temporomandibular Disorders: Insights from the OPPERA Study, International Pelvic Pain Society (2012)
 20. Sheila Gaynor, Denniz Zolnoun, Erin Carey, Gary Slade, Naomi Brownstein, Richard Ohrbach, Roger Fillingim, Joel Greenspan, Ron Dubner, William Maixner, **Eric Bair**, OPPERA Study Identifies an Association Between the Use of Hormonal Contraceptives and Orofacial Pain and Headaches, International Pelvic Pain Society (2012)
 21. Jasmine Lewis, **Eric Bair**, Richard Gracely, Denniz Zolnoun, Quality and Intensity of Sensations Evoked by Cotton Swab Palpation of the Vestibule among Women with and without Vestibulodynia, International Pelvic Pain Society (2012)
 22. Elizabeth Simmons, **Eric Bair**, Jessica Hartung, Kinnari Desia, William Maixner, Andrea Nackley, Denniz Zolnoun, History Of Comorbid Orofacial Pain Among Women With Vulvar Vestibulitis Syndrome, International Pelvic Pain Society (2012)
 23. Frank Tu, Donna Wilson, Sawsan As-Sanie, Erin Carey, Denniz Zolnoun, Lia Weiner, Gary Slade, Richard Ohrbach, Joel Greenspan, Ron Dubner, Roger Fillingim, William Maixner, **Eric Bair**, Putative Risk Factors for Dysmenorrhea: Results from the OPPERA Study, International Pelvic Pain Society (2012)
 24. Denniz Zolnoun, **Eric Bair**, Greg Essick, Richard Gracely, Jasmine Lewis, William Maixner, Reliability and Reproducibility of a Novel Methodology for Assessment of Pressure Pain Sensitivity in the Pelvic Region, International Pelvic Pain Society (2012)
 25. Naomi Brownstein, Jianwen Cai, Gary Slade, Shad Smith, Luda Diatchenko, **Eric Bair**, Bootstrap Methods for Association Analysis on Intermediate Phenotypes in Case-Control Studies, Triangle Statistical Genetics Conference (2012)
 26. Erin T. Carey, Denniz Zolnoun, Gary Slade, Richard Ohrbach, Flora Mulkey, Naomi Brownstein, Victoria Nneji, Ron Dubner, Joel Greenspan, Roger Fillingim, William Maixner, **Eric Bair**, Associations Between Gynecological Characteristics and Temporomandibular Disorders: Insights from the OPPERA Study, International Association for the Study of Pain (2012)
 27. Sheila Gaynor, Denniz Zolnoun, Erin Carey, Gary Slade, Naomi Brownstein, Richard Ohrbach, Roger Fillingim, Joel Greenspan, Ron Dubner, William Maixner, **Eric Bair**, OPPERA Study Identifies an Association Between the Use of Hormonal Contraceptives and Orofacial Pain and Headaches, International Association for the Study of Pain (2012)
 28. Joel D. Greenspan, **Eric Bair**, Gary D. Slade, Roger B. Fillingim, Richard Ohrbach, Ronald Dubner, Charlie Knott, Qian Liu, Rebecca Rothwell, Flora Mulkey, William Maixner, The Magnitude of Sex Differences Varies Across Pain Modalities and Measures, International Association for the Study of Pain (2012)
 29. Elizabeth Simmons, **Eric Bair**, Jessica Hartung, Kinnari Desia, William Maixner, Andrea

- Nackley, Denniz Zolnoun, History Of Comorbid Orofacial Pain Among Women With Vulvar Vestibulitis Syndrome, International Association for the Study of Pain (2012)
30. Shad B. Smith, **Eric Bair**, Gary D. Slade, Sheila Gaynor, Ronald Dubner, Roger B. Fillingim, Joel D. Greenspan, Richard Ohrbach, Charles Knott, Luda Diatchenko, William Maixner, Cluster Analysis of Two Large TMD Cohorts Reveals Distinct Pathways of Susceptibility, International Association for the Study of Pain (2012)
 31. Donna Wilson, Erin Carey, Denniz Zolnoun, Gary Slade, Weiyu Hu, Erica Browne, Richard Ohrbach, Joel Greenspan, Ron Dubner, Roger Fillingim, William Maixner, **Eric Bair**, Putative Risk Factors for Dysmenorrhea: Results from the OPPERA Study, International Association for the Study of Pain (2012)
 32. Denniz Zolnoun, **Eric Bair**, Greg Essick, Richard Gracely, Jasmine Lewis, William Maixner, Reliability and Reproducibility of a Novel Methodology for Assessment of Pressure Pain Sensitivity in the Pelvic Region, International Association for the Study of Pain (2012)
 33. Naomi Brownstein, **Eric Bair**, Jianwen Cai, Gary Slade, Parameter Estimation in Cox Proportional Hazard Models with Missing Censoring Indicators, Eastern North American Region of the International Biometric Society (2012)
 34. Sheila Gaynor, **Eric Bair**, Identification of Clinically Relevant Disease Subtypes using Supervised Sparse Clustering, Eastern North American Region of the International Biometric Society (2012)
 35. Flora Mulkey, **Eric Bair**, Identification of Significant Features in High-Dimensional Data Using Supervised Principal Components, Joint Statistical Meetings (2011)
 36. **Eric Bair**, Alisa Eanes, Denniz Zolnoun, Psychosexual Correlates of Persistent Pain in Post Vestibulectomy Patients, International Pelvic Pain Society (2010)
 37. **Eric Bair**, Sheng-Yung Chang, Alice Wang, James Korkola, Karen Chew, Joe Gray, Fred Waldman, Kit Fun Lau, Prognosis of breast cancer patients using a small set of genes from novel statistical analyses, Congress of the International Association for Breast Cancer Research (2003)
 38. **Eric Bair**, Robert Tibshirani, Methods to predict patient survival based on gene expression data, Stanford University Industrial Affiliates Seminar (2003)
 39. **Eric Bair**, Lance Littlejohn, A Note on Euler-Cauchy Differential Equations, Intermountain Section of the Mathematical Association of America (1998)

Invited Oral Presentations: Local and State

- 2015 Identification of TMD Subtypes: The OPPERA Study, University of North Carolina, Chapel Hill, NC
- 2015 Testing for the Presence of Clusters in a Data Set, University of North Carolina, Chapel Hill, NC
- 2013 Random Forest Importance Scores: Significance Testing and Conditional Importance, University of North Carolina, Chapel Hill, NC
- 2013 Finding an Academic Job in Statistics/Biostatistics, University of North Carolina, Chapel Hill, NC
- 2012 Statistical Methods in Chronic Pain Research, University of North Carolina, Chapel Hill, NC
- 2012 Bootstrap Methods for Association Analysis on Intermediate Phenotypes in Case-Control

Studies, GlaxoSmithKline, Research Triangle Park, NC

- 2012 Supervised Sparse Clustering Identifies Putative Subtypes of Temporomandibular Disorders, University of North Carolina, Chapel Hill, NC
- 2009 Genome Wide Association Studies: Statistical Challenges and Some (Tentative) Solutions, University of North Carolina, Chapel Hill, NC
- 2003 Methods to predict patient survival based on gene expression data, Celera Diagnostics, Alameda, CA

Invited Oral Presentations: National and International

- 2016 Random Forest Importance Scores: Significance Testing and Conditional Importance, Stanford University, Stanford, CA
- 2014 Identification of TMD Subtypes: The OPPERA Study, NIH Annual Pain Consortium Symposium, Bethesda, MD
- 2013 Methods and Results from the OPPERA Study, State University of Sao Paulo, Araraquara, Brazil
- 2013 The OPPERA study: study design and principal findings, Interdisciplinary Pain Congress of the University of Sao Paulo, Sao Paulo, Brazil
- 2013 The OPPERA study: putative risk factors for chronic and first-onset TMD, Interdisciplinary Pain Congress of the University of Sao Paulo, Sao Paulo, Brazil
- 2013 The OPPERA study: new insights on gynecological pain, Interdisciplinary Pain Congress of the University of Sao Paulo, Sao Paulo, Brazil
- 2013 Biomarkers of Chronic Orofacial Pain: Suggestion of a New Classification System, International Association for Dental Research, Seattle, WA
- 2013 Finding a Postdoctoral Fellowship or Tenure-Track Job, Eastern North American Region of the International Biometric Society, Orlando, FL
- 2012 Methods and Results from the OPPERA Study, University of Campinas Dental School, Campinas, Brazil
- 2009 Prediction of patient outcomes based on high-throughput genetic data using supervised principal components, Joint Statistical Meetings, Washington, DC
- 2005 Methods to predict patient survival based on gene expression data, Annual Conference of the International Society for Clinical Biostatistics, Szeged, Hungary

Teaching Activities

Major Teaching and Administrative Responsibilities (Courses)

- 2014-present Course Director, BIOS 660: Probability and Statistical Inference I (3 credit hours, 30-35 students)
- 2014-present Course Director, BBSP 610: Biostatistics for Laboratory Scientists (2 credit hours, 30-35 students)
- 2010-2014 Course Director, BIOS 610: Biostatistics for Laboratory Scientists (3 credit hours, 30-35 students)

Theses Directed (BSPH, MS, PhD, DrPH)

- 2016-present Amaanti Sridhar, MS Thesis
- 2012-present Erika Helgeson, Biostatistics, PhD Thesis
 - 2016 Peer-reviewed journal article: Pain
 - 2015 Conference presentation: Eastern North American Region of the International Biometric Society
 - 2014 NSF Graduate Research Fellow
 - 2013 Peer-reviewed journal article: Journal of Pain
 - 2013 NSF Graduate Research Fellowship Honorable Mention
 - 2013 Conference presentation: Eastern North American Region of the International Biometric Society
 - 2012 Gillings Merit Scholarship
- 2013-2016 Genetic Association Analysis on Secondary Phenotypes and Group Conditional Importance in the OPPERA Study
 - Wei Xue, Biostatistics, DrPH Thesis
 - 2015 Conference presentation: Eastern North American Region of the International Biometric Society
- 2015-2016 Comparison of Random Forests and Gradient Boosting Machines for Problems with Increasing Numbers of Variables
 - Jitong Lou, Biostatistics, MS Thesis
- 2015-2016 Sure Independence Screening to Applied to Genotypic Data in the OPPERA Case-Control Study
 - Ivey Redding, Biostatistics, MS Thesis
- 2015-2016 Using Comorbid Conditions to Predict Pain Measures of Patients with TMD
 - Subodh Selukar, Biostatistics, BSPH Thesis
 - 2016 NSF Graduate Research Fellowship Honorable Mention
- 2014-2015 Classifying Mislabeled High-Dimensional Data with Iterated Supervised Principal Components Analysis
 - Anthony Abrantes, Biostatistics, MS Thesis
- 2014-2015 A Comparison of the Supervised Principal Components and Lassoed Principal Components Methods for High-Dimensional Data

- Eric Van Buren, Biostatistics, MS Thesis
 2015 NSF Graduate Research Fellowship Honorable Mention
 2014 NSF Graduate Research Fellowship Honorable Mention
- 2014-2015 Factor Structure of the Psychosocial Variables in the OPPERA Case-Control Study
 Yunshu Zhou, Biostatistics, MS Thesis
- 2012-2014 Non-Parametric Machine Learning Methods for Clustering and Variable Selection
 Qian Liu, Biostatistics, PhD Thesis
 2014 Best Student Paper Award: Eastern North American Region of the International Biometric Society
 2014 Conference presentation: Eastern North American Region of the International Biometric Society
 2013 2 peer-reviewed journal articles: Journal of Pain, Pain
 2013 Conference presentation: Eastern North American Region of the International Biometric Society
 2012 Conference abstract: International Association for the Study of Pain
- 2013-2014 Demographic Predictors of Pain Sensitivity Among Participants in the OPPERA Study
 Cara Ostrom, Biostatistics, MS Thesis
- 2012-2013 Psychosocial Risk Factors for Pain-Related Disability: Discoveries from the OPPERA Study
 Nicole Mack, Biostatistics, MS Thesis
 2013 Peer-reviewed journal article: Journal of Pain
- 2011-2013 Analysis of Time-to-Event Data, Intermediate Phenotypes, and Sparse Factors in the OPPERA Study
 Naomi Brownstein, Biostatistics, PhD Thesis
 2013 2 peer-reviewed journal articles: Pain, Journal of Pain
 2013 Conference presentation: Eastern North American Region of the International Biometric Society
 2012 Gertude Cox Scholarship honorable mention (awarded to the top female statistics student nationwide)
 2012 2 conference presentations: Eastern North American Region of the International Biometric Society, Triangle Statistical Genetics Conference
 2012 4 conference abstracts: International Association for the Study of Pain, International Pelvic Pain Society
 2011 Regina C. Elandt-Johnson Master's Paper Award (awarded to the best MS paper in UNC's Department of Biostatistics)
- 2011-2013 Identification of Biologically Relevant Subtypes via Preweighted Sparse Clustering
 Sheila Gaynor, Biostatistics, BSPH Thesis
 2014 Conference presentation: Eastern North American Region of the International Biometric Society
 2013 NSF Graduate Research Fellow
 2013 Conference presentation: Eastern North American Region of the International Biometric Society
 2012 Best poster award: International Pelvic Pain Society

2012 Jessica Satia Scholarship (UNC School of Public Health)
2012 UNC Summer Undergraduate Research Fellowship
2012 Conference presentation: Eastern North American Region of the International Biometric Society
2012 3 conference abstracts: International Association for the Study of Pain, International Pelvic Pain Society

2010-2012 Methods for Population Pharmacokinetics and Pharmacodynamics
Emily Colby, Biostatistics, DrPH Thesis
2013 Peer-reviewed journal article: Journal of Pharmacokinetics and Pharmacodynamics

2012 Improved Phenotyping of Vulvodynia
Ellen Mir, Biostatistics, MS Thesis
2013 Peer-reviewed journal article: Journal of Pain
2013 Conference abstract: International Pelvic Pain Society

2011-2012 Putative Risk Factors for Dysmenorrhea Case-Classification and Severity: Cross-Sectional Results from the OPPERA Cohort Study
Donna Wilson, Biostatistics, MS Thesis
2012 2 conference abstracts: International Association for the Study of Pain, International Pelvic Pain Society

2010-2011 Identification of Significant Features in High-Dimensional Data
Flora Mulkey, Biostatistics, MS Thesis
2012 2 conference abstracts: International Association for the Study of Pain, International Pelvic Pain Society
2011 3 peer-reviewed journal articles: Journal of Pain
2011 Conference presentation: Joint Statistical Meetings

2010-2011 New Insights on Heat Pain Temporal Summation – Results from the OPPERA Study
Rebecca Rothwell, Biostatistics, BSPH Thesis
2012 conference abstract: International Association for the Study of Pain
2011 NSF Graduate Research Fellow
2011 2 peer-reviewed journal articles: Journal of Pain

Other Thesis and Predoctoral Research Committees

2016-present Rachel Nethery, PhD Thesis

2011-2016 Learning Methods in Reproducing Kernel Hilbert Spaces Based on High-Dimensional Features
Hojin Yang, Biostatistics, PhD Thesis

2014-2015 Class-Sensitive Principal Components Analysis
Di Miao, Statistics and Operations Research, PhD Thesis

2011-2013 Bayesian Nonparametric Differential Equation Models for Functions
Matthew Wheeler, Biostatistics, PhD Thesis

- 2011-2012 Associations Between Gynecological Characteristics and Temporomandibular Disorders: Insights from the OPPERA Study
Erin Carey, Clinical Research, MS Thesis
- 2011 Nonparametric Bounds and Sensitivity Analysis on Treatment Effects
Amy Richardson, Biostatistics, MS Thesis
- 2011 Comparison of Three Binary Screening Tests in the Presence of Verification Bias
Cristina Baraian, Biostatistics, MS Thesis
- 2010-2011 The Correlation Between Blood Pressure and Postoperative Pain in Endodontic Patients
Wayne King, Endodontics, MS Thesis
- 2008-2009 Genetic Basis for Individual Variation in Pain Perception Among Endodontic Patients
Elizabeth Applebaum, Endodontics, MS Thesis

Other Student Mentoring

- 2011 Weiyu Hu, Biostatistics Summer Undergraduate Research and Education (BSURE) Program
- 2011 Victoria Nneji, Biostatistics Summer Undergraduate Research and Education (BSURE) Program

Grants and Contracts

Active

- 2015-present NIH/NIDCR R56DE025399, "Circulating MicroRNAs and TLR8 Activation in Chronic Pain." PI: Asma Khan, Investigator: Eric Bair, 15% FTE, Total Award: \$494,131
- 2014-present NIH/NHLBI R01HL116228, "Mucus and Hypoxia in Heterogeneous and Progressive CF Lung Disease." PI: Marianne Muhlebach, Investigator: Eric Bair, 5% FTE, Total Award: \$523,916.96
- 2012-present NIH/NCATS UL1RR025747, "UNC CTSA Renewal." PI: John Buse, Investigator: Eric Bair 10% FTE, Total Award: \$10,119,351.00
- 2012-present NIH/NICHD R01HD072983, "A Necessary Multi-Parametric Evaluation of Vulvodynia." PI: Richard Gracely, Investigator: Eric Bair, 5% FTE, Total Award: \$418,313.00
- 2012-present NIH/NIDCR U01DE017018, "Genetic and Psychosocial Influences on Transition to Chronic TMD and Related Pain." Program Director: William Maixner, Investigator: Eric Bair, 50% FTE, Total Award: \$3,910,739.00

Completed

- 2013-2016 NIH/NIDCR R03DE023592, "Identification of Clinically Relevant TMD Subtypes

Using Cluster Analysis.” PI: Eric Bair, 15% FTE, Total Award: \$146,349.00

- 2014-2016 CAPES (Brazil) A079/2013, “Um Estudo de Avaliação de Riscos para o Desenvolvimento das Disfunções Temporomandibulares: Tradução e Validação dos Instrumentos de Avaliação da Dor Facial.” Co-PI’s: Celia Marisa Rizzatti Barbosa and Eric Bair, 10% FTE, Total Award: R\$120,00.00 (approximately \$60,000)
- 2011-2015 NIH/NINR R01NR013359, “Mapping Multidimensional Illness Trajectories of Patients With ESKD.” PI: Mi-Kyung Song, Investigator: Eric Bair, 5% FTE, Total Award: \$406,156.00
- 2010-2015 NIH/NIEHS P03ES010126, “UNC-CH Center for Environmental Health and Susceptibility.” PI: James Swenberg, Investigator: Eric Bair, 10% FTE, Total Award: \$1,136,520.00
- 2010-2015 NIH/NINDS P01NS045685, “Complex Persistent Pain Conditions: Common and Unique Pathways of Vulnerability.” PI: William Maixner, Investigator: Eric Bair (no cost to grant), Total Award: \$1,221,031.00
- 2012-2013 National Vulvodynia Association, “Enhanced Phenotyping of Vulvodynia Using Advanced Statistical Methods.” PI: Eric Bair (no cost to grant), Total Award: \$30,000
- 2008-2013 NIH/NIAMSD R01AR056328, “Genetic Predictors of Acute and Chronic Musculoskeletal Pain After Minor MVC.” PI: Samuel McLean, Investigator: Eric Bair, 20% FTE, Total Award: \$2,147,232.00
- 2005-2012 NIH/NIDCR U01DE017018, “Risk Factors for Onset and Persistence of TMD.” Program Directory: William Maixner, Investigator: Eric Bair, 15% FTE Total Award: \$8,743,146.00

Professional Service

University of North Carolina-Chapel Hill

- 2013-2014 Co-Chair: Seminar Committee, Department of Biostatistics
- 2013-2014 Member: Bioinformatics Search Committee, School of Dentistry
- 2012-present Member: Alumni Activities and Social Committee, Department of Biostatistics
- 2012-2013 Member: PhD Qualifying Exam Committee, Department of Biostatistics
- 2011-present Member: MS Qualifying Exam Committee, Department of Biostatistics

State/National/International

- 2015-present Member: NIH/NIDCR Review Panel ZDE1 (Oral Health Data Analysis and Statistical Methodology Development)

Peer review journals and editorial boards

- 2016-present Reviewer – *Statistics and Computing*
- 2016-present Reviewer – *Journal of Orofacial Pain and Headache*

2016-present Reviewer – *Computer Methods and Programs in Biomedicine*
2015-present Reviewer – *R Journal*
2015-present Reviewer – *IEEE Transactions on Cybernetics*
2014-present Reviewer – *Complementary Therapies in Medicine*
2014-present Reviewer – *Expert Systems*
2014-present Reviewer – *Future Microbiology*
2014-present Reviewer – *Community Dental Health*
2014-present Reviewer – *British Journal of Gynecology*
2013-present Reviewer – *Information Sciences*
2013-present Reviewer – *Journal of Dental Research*
2013-present Reviewer – *Journal of Chemometrics*
2012-present Reviewer – *PLoS One*
2011-present Reviewer – *Biostatistics*
2008-present Reviewer – *Biometrika*
2008-present Reviewer – *Journal of the American Statistical Association*
2007-present Reviewer – *Lifetime Data Analysis*
2006-present Reviewer – *Biometrics*
2006-present Reviewer – *Blood*
2006-present Reviewer – *Journal of Bioinformatics and Computational Biology*
2006-present Reviewer – *Molecular Cancer Therapeutics*
2006-present Reviewer – *Statistics in Medicine*
2005-present Reviewer – *PLoS Biology*
2005-present Reviewer – *BMC Bioinformatics*
2005-present Reviewer – *The New England Journal of Medicine*
2003-present Reviewer – *Genome Biology*
2003-present Reviewer – *Bioinformatics*