

Megan Michel

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EDUCATION

Doctor of Philosophy, Human Evolutionary Biology 2017-present

Harvard University, Boston, MA

Jointly Affiliated with the MPI for the Science of Human History, Jena, Germany

Committee: Alexander Herbig, Johannes Krause, David Reich (chair), Christina Warinner

Master of Arts, Human Evolutionary Biology May 2020

Harvard University, Boston, MA

Bachelor of Arts in Biology (History Minor), Highest Honors May 2015

Oberlin College, Oberlin, OH

RESEARCH EXPERIENCE

Doctoral Researcher 2019- 2020

Department of Archaeogenetics, Max Planck Institute for the Science of Human History, Jena, Germany

- Conceptualized and implemented a study using comparative genomics to explore *Streptococcus mutans* population history and adaptation across human dietary transitions
- Performed metagenomic screening and designed hybridization capture assay to retrieve *Plasmodium* DNA from ancient human remains

Ancient DNA Technician 2015-2017

Reich Lab, Department of Genetics, Harvard Medical School, Boston, MA

- Collaborated with archaeologists to select osteological samples for ancient DNA analysis
- Performed DNA extraction, library preparation, hybridization capture, and sequencing of ancient samples for human population genetic studies

Research Assistant 2015

Garvin Lab, Department of Biology, Oberlin College, Oberlin, OH

- Designed and conducted experiments to test the feeding behavior of *Culex pipiens*, a vector of West Nile Virus in the midwestern United States
- Participated in the design, installation, and testing of an olfactometer apparatus
- Maintained a captive colony of *Culex pipiens* mosquitoes

Research Assistant 2014

Warman Lab, Department of Genetics, Boston Children's Hospital, Boston, MA

- Utilized droplet digital PCR to identify disease-causing somatic mutations in clinical samples of human blood, tissue, and urine

Research Assistant**2013-2015***Cruz Lab, Department of Biology, Oberlin College, Oberlin, OH*

- Designed and conducted experiments to explore the morphology and physiology of sperm pairing in the gray short-tailed opossum (*Monodelphis domestica*)

Field Research Assistant**2012***Tarvin Lab, Department of Biology, Oberlin College, Oberlin, OH*

- Identified and monitored American goldfinch (*Spinus tristis*) nests to investigate the impact of female ornament on male provisioning behavior

TEACHING**Teaching Fellow****2020***Department of Anthropology, Harvard University, Cambridge, MA**ANTHRO 1270: Sick: 10,000 Years of Health and Disease**Instructor: Dr. Christina Warinner, Anthropology*

- Developed lab materials related to the study of disease in human history
- Designed and implemented pedagogical strategies for interactive learning on an online platform
- Conducted weekly sections, leading discussion of assigned readings and conducting interactive lab activities
- Graded labs, exams, papers, and presentations

Teaching Fellow**2018***General Education, Harvard University, Cambridge, MA**SLS 12: Understanding Darwinism**Instructors: Dr. Andrew Berry, OEB, and Dr. Janet Browne, History of Science*

- Conducted weekly sections, leading discussion of assigned readings, reviewing lecture material, and working through practice problems
- Graded problem sets, exams, and papers

Peer Advisor**2012-2014***Oberlin Workshop and Learning Sessions Program, Oberlin College, Oberlin, OH**Organismal Biology and Chemical Principles*

- Designed curriculum-enhancing activities to facilitate mastery of difficult concepts
- Conducted workshops to teach study skills and reinforce lecture material

Public Outreach**Outreach Working Group Co-Leader****2020-present***Diversity and Inclusion Task Force**Human Evolutionary Biology Department, Harvard University, Cambridge, MA*

- Organized and hosted first departmental virtual open house for prospective graduate students, specifically targeting groups traditionally underrepresented in the sciences
- Design new initiatives for public communication of departmental research in an accessible manner

**Science Education Partner****2018-2019***Harvard Museums of Science and Culture*

- Designed interactive activities for communicating my research to a public audience
- Implemented activities at the Harvard Museum of Natural History (HMNH) and during the HMNH's annual "I Heart Science" event

Fifth Grade Science Teaching Assistant**2014***Hillsdale Middle School, Jeromesville, OH*

- Designed and conducted laboratory activities in a fifth-grade science classroom to enhance understanding of scientific concepts and generate interest in science

PEER-REVIEWED PUBLICATIONS

Michel, M., D. Konczyk, K. Yeung, R. Murillo, M. Vivero, A. Hall, D. Zurakowski, D. Adams, A. Gupta, A. Huang, B. Chung, and M. Warman. "Causal somatic mutations in urine DNA from persons with the CLOVES subgroup of the PIK3CA-related overgrowth spectrum." *Clinical Genetic* 2018; 93(5): 1075-1080.

Agranat-Tamir, L., C. Waldman, M.A.S. Martin, D. Gokhman, N. Mishol, T. Eshel, O. Cheronet, N. Rohland, S. Mallick, N. Adamski, A.M. Lawson, M. Mah, **M. Michel**, J. Oppenheimer, K. Stewardson, F. Candilio, D. Keating, B. Gamarra, S. Tzur, M. Novak, R. Kalisher, S. Bechar, V. Eshed, D.J. Kennett, M. Faerman, N. Yahalom-Mack, J.M. Monge, Y. Govrin, Y. Erel, B. Yakir, R. Pinhasi, S. Carmi, I. Finkelstein, L. Carmel, and D. Reich. "The Genomic History of the Bronze Age Southern Levant." *Cell* 2020; 181: 1146-1157.

Nakatsuka, N., I. Lazaridis, C. Barbieri, P. Skoglund, N. Rohland, S. Mallick, C. Posth, K. Harkins-Kinkaid, M. Ferry, E. Harney, **M. Michel**, K. Stewardson, J. Novak-Forst, J.M. Capriles, M.A. Durruty, K.A. Alvarez, D. Beresford-Jones, R. Burger, L. Cadwallader, R. Fujita, J. Isla, G. Lau, C.L. muz Aguirre, S. LeBlanc, S. C. Maldonado, F. Meddens, P.G. Messineo, B.J. Culleton, T.K. Harper, J. Quilter, G. Politis, K. Rademaker, M. Reindel, M. Rivera, L. Salazar, J.R. Sandoval, C.M. Santoro, N. Scheifler, V. Standen, M.I. Barreto, I.F. Espinoza, E. Tomasto-Cagigao, G. Valverde, D.J. Kennett, A. Cooper, J. Krause, W. Haak, B. Llamas, D. Reich, and L. Fehren-Schmitz. "A Paleogenomic Reconstruction of the Deep Population History of the Andes." *Cell* 2020; 181: 1131-45.

Marcus, J.H., C. Posth, H. Ringbauer, L. Lai, R. Skeates, C. Sidore, J. Beckett, A. Furtwängler, A. Olivieri, C.W.K. Chiang, H. Al-Asadi, K. Dey, T.A. Joseph, C.C. Liu, C. Der Sarkissian, R. Radzevičiūtė, **M. Michel**, M.G. Gradoli, P. Marongiu, S. Rubino, V. Mazzarello, D. Rovina, A. La Fragola, R.M. Serra, P. Bandiera, R. Bianucci, E. Pompianu, C. Murgia, M. Guirguis, R.P. Orguin, N. Tuross, P. van Dommelen, W. Haak, D. Reich, D. Schlessinger, F. Cucca, J. Krause, and J. Novembre. "Genetic history from the Middle Neolithic to present on the Mediterranean island of Sardinia." *Nature Communications* 2020; 11(939).

Brace, S., Y. Diekmann, T. Booth, L. van Dorp, Z. Faltyskova, N. Rohland, S. Mallick, I. Olalde,

- M. Ferry, **M. Michel**, J. Oppenheimer, N. Broomandkhoshbacht, K. Stewardson, R. Martiniano, S. Walsh, M. Kayser, S. Charlton, G. Hellenthal, I. Armit, R. Schulting, O. Craig, A. Sheridan, M. Parker Pearson, C. Stringer, D. Reich, M. Thomas, and I. Barnes. "Ancient genomes indicate population replacement in Early Neolithic Britain." *Nature Ecology & Evolution* 2019; 3: 765-771.
- Shinde, V., V. Narasimhan, N. Rohland, S. Mallick, M. Mah, M. Lipson, N. Nakatsuka, N. Adamski, N. Broomandkhoshbacht, M. Ferry, A.M. Lawson, **M. Michel**, J. Oppenheimer, K. Stewardson, N. Jadhav, J.Y. Kim, M. Chatterjee, A. Munshi, A. Panyam, P. Waghmare, Y. Yadav, H. Patel, A. Kaushik, K. Thangaraj, M. Meyer, N. Patterson, N. Rai, and D. Reich. "An ancient Harappan genome lacks ancestry from Steppe pastoralists or Iranian farmers." *Cell* 2019; 179(3): 729-735.
- Narasimhan, V., N. Patterson, P. Moorjani, N. Rohland, R. Bernardos, S. Mallick, I. Lazaridis, \ N. Nakatsuka, I. Olalde, M. Lipson, A. Kim, L. Olivieri, A. Coppa, M. Vidale, J. Mallory, V. Moiseyev, E. Kitov, J. Monge, N. Adamski, N. Alex, N. Broomandkhoshbacht, F. Candilio, K. Callan, O. Cheronet, B. Culleton, M. Ferry, D. Fernandes, S. Freilich, B. Gamarra, D. Gaudio, M. Hajdinjak, E. Harney, T. Harper, D. Keating, A. Lawson, M. Mah, K. Mandl, **M. Michel**, M. Novak, J. Oppenheimer, N. Rai, K. Sirak, V. Slon, K. Stewardson, F. Zalzal, Z. Zhang, G. Akhatov, A. Bagashev, A. Bagnera, B. Baitanayev, J. Bendezu-Sarmiento, A. Bissembaev, G. L. Bonora, T. Charginov, T. Chikisheva, P. Dashkovskiy, A. Derevianko, M. Dobeš, K. Douka, N. Dubova, M. Duisengali, D. Enshin, A. Epimakhov, A. Fribus, D. Fullter, A. Goryachev, A. Gromov, S. Grushin, B. Hanks, M. Judd, E. Kazizov, A. Khokhlov, A. Krygin, E. Kupriyanova, P. Kuznetsov, D. Luiselli, F. Maksudov, A. Mamedov, T. Mamirov, C. Meiklejohn, D. Merrett, R. Micheli, O. Mochalov, S. Mustafokulov, A. Nayak, D. Pettner, R. Potts, D. Razhev, M. Rykun, S. Sarno, T. Savenkova, K. Sikhymbaevae, S. Slepchenko, O. Soltobaev, N. Stepanova, S. Svyatko, K. Tabaldiev, M. Teschler-Nicola, A. Tishkin, V. Tkachev, S. Vasilyev, P. Veleminsky, D. Voyakin, A. Yermolayeva, M. Zahir, V. Zubkov, A. Zubkov, V. Shinde, C. Lalueza-Fox, M. Meyer, D. Anthony, N. Boivin, K. Thangaraj, D. Kennet, M. Frachetti, R. Pinhasi, D. Reich. "The formation of human populations in South and Central Asia." *Science* 2019; 365(6457): eaat7487.
- Harney, É., A. Nayak, N. Patterson, P. Joglikar, V. Musharif-Tripathy, S. Mallick, N. Rohland, J. Sedig, N. Adamski, R. Bernardos, N. Broomandkhoshbacht, B. Culleton, M. Ferry, T. Harper, **M. Michel**, J. Oppenheimer, K. Stewardson, Z. Zhang, Harashawardhana, M. Bartwal, S. Kumar, S. Chandra Diyundi, P. Roberts, N. Boivin, D. Kennett, K. Thangaraj, D. Reich, and N. Rai. "Ancient DNA from the skeletons of Roopkund Lake reveals Mediterranean migrants in India." *Nature Communications* 2019; 10(3670).
- Posth, C., N. Nakatsuka, I. Lazaridis, P. Skoglund, S. Mallick, T. Lamnidis, N. Rohland, K. Nägele, N. Adamski, E. Bertolini, N. Broomandkhoshbacht, A. Cooper, B. Culleton, T. Ferraz, M. Ferry, A. Furtwängler, W. Haak, K. Harkins, T. Harper, T. Hünemeier, A.M. Lawson, B. Llamas, **M. Michel**, E. Nelson, J. Oppenheimer, N. Patterson, S. Schiffels, J. Sedig, K. Stewardson, S. Talamo, C. Wang, J. Hublin, M. Hubbe, K. Harvati, A. Delaunay, J. Beier, M. Francken, P. Kaulicke, H. Reyes-Centeno, K. Rademaker, W.

- Trask, M. Robinson, S. Gutierrez, K. Prufer, D. Salazar-Garcia, E. Chim, L. Gomes, M. Alves, A. Liryo, M. Inglez, R. Oliveira, D. Bernardo, A. Barioni, V. Wesolowski, N. Scheifler, M. Rivera, C. Plens, P. Messineo, L. Figuti, D. Corach, C. Scabuzzo, S. Eggers, P. DeBlasis, M. Reindel, C. Méndez, G. Politis, E. Tomasto-Cagigao, D. Kennett, A. Strauss, L. Fehren-Schmitz, J. Krause, and D. Reich. "Reconstructing the deep population history of Central and South America." *Cell* 2018; 175(5): 1185-1197.
- Garvin, M., A. Austin, N. Stracker, S. Slowinski, J. Rutter, M. Butler, **M. Michel**, and R. Whelan. "Attraction of *Culex pipiens* to uropygial gland secretions does not explain feeding preference for American robins." *Journal of Vector Ecology* 2018; 43(1): 110-116.
- Lipson, M., O. Cheronet, S. Mallick, N. Rohland, M. Oxenham, M. Pietrusewsky, T. O. Pryce, A. Willis, H. Matsumura, H. Buckley, K. Domett, G. Nguyen, H. Trinh, A. Kyaw, T. Win, B. Pradier, N. Broomandkhoshbacht, F. Candilio, P. Changmai, D. Fernandes, M. Ferry, B. Gamarra, E. Harney, J. Kampuansai, W. Kutanan, **M. Michel**, M. Novak, J. Oppenheimer, K. Sirak, K. Stewardson, Z. Zhang, P. Flegontov, R. Pinhasi, and D. Reich. "Ancient genomes document multiple waves of migration in Southeast Asian prehistory." *Science* 2018; 361(6397): 92-95.
- Lipson, M., P. Skoglund, M. Spriggs, F. Valentin, S. Bedford, R. Shing, H. Buckley, I. Phillip, G. Ward, S. Mallick, N. Rohland, N. Broomandkhoshbacht, O. Cheronet, M. Ferry, T. Harper, **M. Michel**, J. Oppenheimer, K. Sirak, K. Stewardson, K. Auckland, A. Hill, K. Maitland, J. Oppenheimer, T. Parks, K. Robson, T. Williams, D. Kennett, A. Mentzer, R. Pinhasi, and D. Reich. "Population turnover in remote Oceania shortly after initial settlement." *Current Biology* 2018; 28(7): 1157-1165.
- Mathieson, I., S. Alpaslan-Roodenberg, C. Posth, A. Szécsényi-Nagy, N. Rohland, S. Mallick, I. Olalde, N. Broomandkhoshbacht, F. Candilio, O. Cheronet, D. Fernandes, M. Ferry, B. Gamarra, G. Fortes, W. Haak, E. Harney, E. Jones, D. Keating, B. Krause-Kyora, I. Kucukkalipci, **M. Michel**, A. Mittnik, K. Nägele, M. Novak, J. Oppenheimer, N. Patterson, S. Pfengle, K. Sirak, K. Stewardson, S. Vai, S. Alexandrov, K. Alt, R. Andreescu, D. Antonović, A. Ash, N. Atanassova, K. Bacvarov, M. Gusztáv, H. Bocherens, M. Bolus, A. Boroneant, Y. Boyadzhiev, A. Budnik, J. Burmaz, S. Chohadzhiev, N. Conard, R. Cottiaux, M. Čuka, C. Cupillard, D. Drucker, N. Elenski, M. Francken, B. Galabova, G. Ganetsovski, B. Gély, T. Hajdu, V. Handzhyiska, K. Harvati, T. Higham, S. Iliev, I. Janković, I. Karavanić, D. Kennett, D. Komso, A. Kozak, D. Labuda, M. Lari, C. Lazar, M. Leppek, K. Leshtakov, D. Lo Vetro, D. Los, I. Lozanov, M. Malina, F. Martini, K. McSweeney, H. Meller, M. Mendusic, P. Mirea, V. Moiseyev, V. Petrova, T. Price, A. Simalcsik, L. Sineo, M. Slaus, V. Slavchev, P. Stanev, A. Starović, T. Szeniczey, S. Talamo, M. Teschler-Nicola, C. Thevenet, I. Valchev, F. Valentin, S. Vasilyev, F. Veljanovska, S. Venelinova, E. Veselovskaya, B. Viola, C. Virag, J. Zaninović, S. Zäuner, P. Stockhammer, G. Catalano, R. Krauß, D. Caramelli, G. Zarina, B. Gaydarska, M. Lillie, A. Nikitin, I. Potekhina, A. Papathanasiou, D. Borić, C. Bonsall, J. Krause, R. Pinhasi, and D. Reich. "The genomic history of southeastern Europe." *Nature* 2018; 555(7695): 197- 203.

- Olalde, I., S. Brace, M. Allentoft, I. Armit, K. Kristiansen, T. Booth, N. Rohland, S. Mallick, A. Szécsényi-Nagy, A. Mittnik, E. Altena, M. Lipson, I. Lazaridis, T. Harper, N. Patterson, N. Broomandkhoshbacht, Y. Diekmann, Z. Faltyskova, D. Fernandes, M. Ferry, E. Harney, P. de Knijff, **M. Michel**, J. Oppenheimer, K. Stewardson, A. Barclay, K. Alt, C. Liesau, P. Ríos, C. Blasco, J. Miguel, R. García, A. Fernández, E. Bánffy, M. Bernabò-Brea, D. Billoin, C. Bonsall, L. Bonsall, T. Allen, L. Büster, S. Carver, L. Navarro, O. Craig, G. Cook, B. Cunliffe, A. Denaire, K. Dinwiddy, N. Dodwell, M. Ernée, C. Evans, M. Kucharik, J. Farré, C. Fowler, M. Gazenbeek, R. Pena, M. Haber-Uriarte, E. Haduch, G. Hey, N. Jowett, T. Knowles, K. Massy, S. Pfrengle, P. Lefranc, O. Lemerrier, A. Lefebvre, C. Martínez, V. Olmo, A. Ramírez, J. Maurandi, T. Majó, J. McKinley, K. McSweeney, B. Mende, A. Modi, G. Kulcsár, V. Kiss, A. Czene, R. Patay, A. Endrodi, K. Köhler, T. Hajdu, T. Szeniczey, J. Dani, Z. Bernert, M. Hoole, O. Cheronet, D. Keating, P. Velemínský, M. Dobes, F. Candilio, F. Brown, R. Fernández, A. Herrero-Corral, S. Tusa, E. Carnieri, L. Lentini, A. Valenti, A. Zanini, C. Waddington, G. Delibes, E. Guerra-Doce, B. Neil, M. Brittain, M. Luke, R. Mortimer, J. Desideri, M. Besse, G. Brücken, M. Furmanek, A. Haluszkó, M. Mackiewicz, A. Rapinski, S. Leach, I. Soriano, K. Lillios, J. Cardoso, M. Pearson, P. Włodarczak, T. Price, P. Prieto, P. Rey, R. Risch, M. Rojo Guerra, A. Schmitt, J. Serrallongue, A. Silva, V. Smrcka, L. Vergnaud, J. Zilhão, D. Caramelli, T. Higham, M. Thomas, D. Kennett, H. Fokkens, V. Heyd, A. Sheridan, K. Sjögren, P. Stockhammer, J. Krause, R. Pinhasi, W. Haak, I. Barnes, C. Lalueza-Fox, and D. Reich. "The Beaker phenomenon and the genomic transformation of northwest Europe." *Nature* 2018; 555(7695): 190-196.
- Lipson, M., A. Szécsényi-Nagy, S. Mallick, A. Pósa, B. Stégmár, V. Keerl, N. Rohland, K. Stewardson, M. Ferry, **M. Michel**, J. Oppenheimer, N. Broomandkhoshbacht, E. Harney, S. Nordenfelt, B. Llamas, B. Gusztáv Mende, K. Köhler, K. Oross, M. Bondár, T. Marton, A. Osztás, J. Jakucs, T. Paluch, F. Horváth, P. Csengeri, J. Koós, K. Sebők, A. Anders, P. Raczky, J. Regénye, J. Barna, S. Fábrián, G. Serlegi, Z. Toldi, E. Gyöngyvér Nagy, J. Dani, E. Molnár, G. Pálfi, L. Márk, B. Melegh, Z. Bánfai, L. Domboróczki, J. Fernández-Eraso, J. Antonio Mujika-Alustiza, C. Alonso Fernández, J. Jiménez Echevarría, R. Bollongino, J. Orschiedt, K. Schierhold, H. Meller, A. Cooper, J. Burger, E. Bánffy, K. Alt, C. Lalueza-Fox, W. Haak, and D. Reich. "Parallel palaeogenomic transects reveal complex genetic history of early European farmers." *Nature* 2017; 551(7680): 368-372.
- Skoglund, P., J. Thompson, M. Prendergast, A. Mittnik, K. Sirak, M. Hajdinjak, T. Salie, N. Rohland, S. Mallick, A. Peltzer, A. Heinze, I. Olalde, M. Ferry, E. Harney, **M. Michel**, K. Stewardson, J. Cerezo-Roman, C. Chiumia, A. Crowther, E. Goman-Chindebvu, A. Gidna, K. Grillo, I. Helenius, G. Hellenthal, R. Helm, M. Horton, S. López, A. Mabulla, J. Parkington, C. Shipton, M. Thomas, R. Tibesasa, M. Welling, V. Hayes, D. Kennett, R. Ramesar, M. Meyer, S. Pääbo, N. Patterson, A. Morris, N. Boivin, R. Pinhasi, J. Krause, and D. Reich. "Reconstructing prehistoric African population structure." *Cell* 2017; 171(1): 59-71.

C.C. Wang, H.Y. Yeh, A.N. Popov, H.Q. Zhang, H. Matsumura, K. Sirak, O. Cheronet, A. Kovalev, N. Rohland, A.M. Kim, R. Bernardos, D. Tumen, J. Zhao, Y.C. Liu, J.Y. Liu, M. Mah, S. Mallick, K. Wang, Z. Zhang, N. Adamski, N. Broomandkhoshbacht, K. Callan, B.J. Culleton, L. Eccles, A.M. Lawson, **M. Michel**, J. Oppenheimer, K. Stewardson, S. Wen, S. Yan, F. Zalzal, R. Chuang, C.J. Huang, C.C. Shiung, Y.G. Nikitin, A.V. Tabarev, A.A. Tishkin, S. Lin, Z.Y. Sun, X.M. Wu, T.L. Yang, X. Hu, L. Chen, H. Du, J. Bayarsaikhan, E. Mijiddori, D. Erdenebaatar, T.O. Iderkhangai, E. Myanmar, H. Kanzawa-Kiriyama, M. Nishino, K.I. Shinoda, O.A. Shubina, J. Guo, O. Deng, L. Kang, D. Li, D. Li, R. Lin, W. Cai, R. Shrestha, L.X. Wang, L. Wei, G. Xie, H. Yao, M. Zhang, G. He, X. Yang, R. Hu, M. Robbeets, S. Schiffels, D.J. Kennett, L. Jin, H. Li, J. Krause, R. Pinhasi, and D. Reich. The Genomic Formation of Human Populations in East Asia. *bioRxiv* 2020. doi.org/10.1101/2020.03.25.004606/.

ORAL PRESENTATIONS

Michel, M. “Oral Histories: Ancient Genomic Analysis of the Caries-Associated Bacterium *Streptococcus mutans*.” From Homer to History with the Max Planck-Harvard Research Center: Recent Results from Bronze Age Investigations, Harvard, MA, Nov. 2019.

Michel, M. “Ancient DNA on the Silk Road: Sampling, Processing, and Prospects.” Young Investigator Symposium, Harvard University, Cambridge, MA, Oct. 2016.

Michel, M. “Sperm Pairing in the Gray Short-Tailed Opossum (*Monodelphis domestica*).” Oberlin College Senior Symposium, Oberlin, OH, May 2015.

POSTER PRESENTATIONS

Michel, M., C. Posth, A. Herbig, N. Tuross, and J. Krause. “Pathogens in the Ancient Mediterranean: *Salmonella* and *Streptococcus*.” 8th International Symposium on Biomolecular Archaeology, Jena, Germany, Sept. 2018.

Michel, M., R. Murillo, M. Vivero, A. Hall, D. Zurakowski, and M. Warman. “Detection of PIK3CA Mutations in the Urine of Overgrowth Patients Using Droplet Digital PCR.” Harvard Integrated Life Sciences Summer Intern Poster Session, Boston, MA, Aug. 2014.

HONORS AND AWARDS

2017	Max Planck-Harvard Research Center for the Archaeoscience of the Ancient Mediterranean Fellowship
2015	Highest Honors in Biology, Oberlin College
2015	Elected to Sigma Xi
2014	Barry M. Goldwater Scholarship Winner
2014	Marshall Scholarship Finalist
2014	Howard Hughes Medical Institute (HHMI), Exceptional Research Opportunities Program at Harvard Medical School and Boston Children’s Hospital
2014	Joshua Levitt Memorial Prize in Biology, Oberlin College

2013	US-UK Fulbright Commission Fellowship, Durham University Summer Institute: The Northern Borders of Empire to the Making of the Middle Ages
2013	Frank Fanning Jewett Prize for promising second year students in chemistry and biochemistry, Oberlin College
2012	CRC Press Chemistry Achievement Award for high-achieving first year chemistry students, Oberlin College
2011- 2014	National Merit Scholarship
2011- 2014	John Frederick Oberlin Scholarship