

NeuroNews

Editor's Note

by Pat Simen

OBERLIN NEUROSCIENCE students, alumni, faculty, and staff had a memorable 2016-17 academic year. Students won awards at conferences, alumni experienced exciting developments in their lives and careers, and visiting faculty brought fascinating topics to our students (including the beautiful fluorescent image of neuroinflammation at the top of this page!).

In this edition of *NeuroNews*, we review the year's student and faculty achievements, including an in-depth interview with 2016 double-degree graduate Matt DiBiase on music and neuroscience.

We also say goodbye to retiring faculty member and longtime neurophysiology instructor Michael Loose, and we welcome our newly hired neurophysiologist, Chris Howard. Farewell Mike! We will miss you. And welcome to Oberlin, Chris!

SAVE THE DATE:

NOVEMBER 11, 2017

OBERLIN REUNION AT SFN MEETING IN D.C.

We will hold an Oberlin neuroscience reunion on **Saturday, November 11 from 4:30-6:30 p.m. at Capitol Brewing Company (1100 New York Avenue, NW Washington, DC 20005)**. A number of Oberlin neuroscience faculty members will be there. It will probably be the last SfN for Professors Loose and Thornton, as they will be retiring. Please join us and forward this information to other Obies who might be attending the conference or reside in the area.

FAREWELL TO MICHAEL LOOSE, RETIRING PROFESSOR OF NEUROPHYSIOLOGY

After 28 years at Oberlin, Professor Michael Loose is retiring in 2017. Mike has been an influential and respected member of the department, and we will miss his thoughtful perspective.

During his career, Loose worked with and mentored more than 100 student researchers, many for multiple semesters or years. His teaching specialty was neurophysiology. He taught *Neurons to Networks to Cognition* and the *Studies in Neuronal Function Lab* each year throughout his career. He also taught and helped revise NSCI 211, our Introductory Neuroscience Lab, and he developed and taught a senior seminar.

Loose's early research examined how hypothalamic neurons function to alter the gonadotropin releasing hormone (GnRH) system (the final neurohormonal signal for the control of reproduction in males and females). For this work, he used single cell electrophysiology in vitro and immunocytochemistry (see photo on page 11).

During sabbatical, Loose retooled his research program. His current research studies the influences, often unconscious, that affect decision-making in humans. He uses electroencephalography (EEG) and quantitative/computational modeling to address these influences. Loose also played a key role in bringing abstract models into our curriculum with the modeling components of the NSCI 211 lab and his participation in the Oberlin Modeling Initiative (OMnI). (What good are models in neuroscience? Imagine the field of genetics without the abstract

model of the DNA double-helix!)

Loose had a half-time appointment for most of his career, but he put in many more hours than that designation would suggest. Generally during the academic year he taught one semester, worked with student researchers, and was available to advisees for both semesters. His service to the department and college has been extensive. He twice served as department chair and most recently organized our



departmental assessment. He even continued on for a semester as chair beyond the end of his retirement from classroom instruction, for which we in the department are very grateful! Within the college, he served as Sigma Xi president, a member of the Research and Development Committee and the Institutional Animal Care and Use Committee, and chair of the Cognitive Sciences Concentration for approximately 10 years.

When asked what he'll remember most fondly about his time here, Loose said, "Students being interested in learning. It was motivational to see how many wanted to learn and worked hard at learning." As

(Continued on p. 11)

Above: neuroinflammation in mouse striatal neurons, from Monica Mariani's neuroimmunology lab course.

FACULTY AND STAFF ACTIVITIES

Mike Loose, professor of neuroscience, has been at Oberlin since 1990. This year he taught Neurophysiology and Studies in Neuronal Function for the last time. He continued his new area of research aimed at determining conditions that differentially influence conscious and unconscious decision-making. Throughout the year he collaborated with three graduating seniors: Emma Hahn, Christine Khoury, and Emma Parkins on this project, as well as with Rachel Dan '19 and Sadie Munter '21. He is looking forward to moving some of his research onto the internet next fall, which would allow data collection to expand 10 to 100 fold.

Jan Thornton, the Claire Emma McGregor '11 Professor of Neuroscience, has been at Oberlin since 1990. Her last semester of teaching will be fall 2017, and she will retire in July 2018. During the 2016-17 academic year, she cotaught the introductory neuroscience class and taught upper level classes in hormones and neuroendocrine research methods. She also mentored seven undergraduate researchers who presented some of their research at the annual meeting of the Society for Neuroscience and meetings of the International Behavioral Neuroscience Society in Budapest and Hiroshima. Jan also served as departmental speakers coordinator (fall 2016), majors liaison, and faculty advisor for the student magazine *The Synapse* and for the neuroscience honor society Nu Rho Psi. She also organized the Oberlin neuroscience reunion at the Society for Neuroscience.

Lynne Bianchi, professor of neuroscience, has been at Oberlin since 1998; in 2011 she became the premed program director.

She advises students and alumni interested in pursuing medical and other health careers. Her research interests continue to focus on the importance of cytokines in early inner ear development. She and colleagues are guest editing a special issue of the *Journal of Experimental Neurology: Cytokines and Chemokines in Neural Development and Regeneration* (summer 2017), and her textbook on developmental neurobiology is expected out by the end of the year.

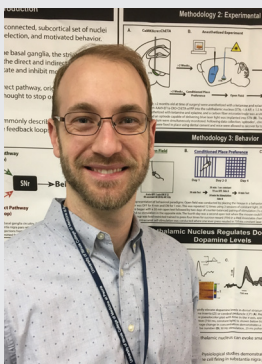
Tracie Paine, associate professor of neuroscience, was on maternity leave in the fall of 2016. She and her husband welcomed their daughter Amelia in October. After a long hiatus from teaching, Tracie cotaught the introductory neuroscience class with Pat Simen and taught a section of the introductory neuroscience lab and a senior seminar titled Neurobiology of Mental Illness in the spring. She also conducted research on the role of the inhibitory neurotransmitter GABA in social behaviors with the help of students Marissa Buckley '17, Nils Gudbradson '17, and Sara Chang '19.

Patrick Simen, associate professor of neuroscience, was granted tenure in spring 2017 after six years as an assistant professor at Oberlin. During his upcoming sabbatical leave, he will continue his research on decision-making and interval timing in humans, using behavioral psychophysics experiments, mathematical and computational modeling, robotics, eyetracking, and electroencephalography (EEG). In 2016-17, he conducted this work with students Xinchong Li '17, Yuka Liu '17, Kate Hull '18, Jacob Nadler '19, Gavi Shandler '18, Zoe Swann '19, and Janet Wu '20. He also plans to travel during his leave, to Australia and New Zealand for research; to Hawaii with his wife and son; and to France, Belgium, Germany, and the Czech Republic with his mom.

Leslie Dowell Kwakye '06, assistant professor of neuroscience, joined the department in spring 2012. She was on sabbatical during the 2016-17 year, during which she continued her research on how top-down cognitive processes such as attention alter multisensory integration. She will be presenting her research this summer at the International Multisensory Research Forum in Nashville, Tenn., and the Society for Music Perception and Cognition meeting in San Diego.

Gunnar Kwakye, assistant professor of neuroscience, joined the department in spring 2012 as a visiting assistant professor and transitioned to a tenure-track assistant professor position in fall 2013. He was on leave this year and worked with two research students over winter term. He'll be teaching Neurotoxicology and Neurodegeneration lecture and lab, Introductory Neuroscience Lab, a senior seminar titled Gene-Environment Interactions in Neurological Disorders, and a new nonmajors course titled Chemicals in Human Health,

WELCOME CHRIS HOWARD, NEW NEUROPHYSIOLOGIST



We are excited to welcome Chris Howard to the neuroscience department this fall and look forward to his contributions! Chris has recently published high-profile articles on the role of dopamine in habit formation in *Neuron* and other journals. He uses cutting-edge neurophysiology techniques,

including cyclic voltammetry (measuring dopamine levels in synapses) and optogenetics. He has taught courses in introductory neurobiology and lab courses, and gave a fascinating job talk at Oberlin last year. Welcome, Chris!



From left: Mike at the 2017 spring picnic, hosted by the Neuro Majors Committee. Despite his expression, he really loves that raffle prize! Jan at the spring picnic with Nora Newcomb '19. Tracie's new baby, Amelia, among the daffodils, in spring 2017. Pat stands with Presentation Award winner Zoe Swann '19 at the mGluRs conference at Ohio State in fall 2016.

as well as mentoring an honors research student next year. Gunnar's lab employs mouse and human neuronal cultures of Huntington's, Parkinson's, and other neurodegenerative diseases to understand the interaction between genetics and the environment in triggering neurodegenerative disease. His lab is studying interactions between pesticides and other neurotoxicant exposures in neurodegenerative disease states.

Brad Carter, visiting assistant professor of neuroscience, joined the department as a visiting assistant professor in 2015; this year, he taught developmental neurobiology lecture and research courses as well as a senior seminar, Neurodevelopment and Society; Utilities and Applications. His research currently focuses on the effects of environmental factors associated with mental health on brain development using zebrafish and advancing undergraduate neuroscience education. Twelve different students conducted research over the course of this past year, and students in his lab presented at the regional undergraduate neuroscience mGluRs conference at Ohio State and ABRCMS 2016 in Tampa, Fla.

Monica Mariani, visiting assistant professor of neuroscience, completed her first year at Oberlin. She taught the introductory neuroscience course NSCI201 and lab NSCI211 in the fall. In the spring, she taught an upper-level course and lab covering neuroimmunology. This summer she will be working with Kirsten Mojzisek '19 and Samantha Westelman '19 studying the immune response to Alzheimer's disease.

Keith Downing, visiting professor of neuroscience, is a professor of Artificial Intelligence at the Norwegian University of Science and Technology (and an Ohio native). He spent the academic year in the neuroscience department, where he continued his research in artificial neural networks, reinforcement learning, and evolutionary computation. Keith also taught a

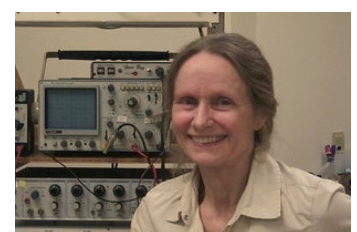
course based loosely on his book, *Intelligence Emerging*, and more directly on recent advances in Deep Learning.

Gigi Knight, instructional and technical assistant, has been with the neuroscience department almost since its inception. She assists with laboratory instruction, provides technical support, and assists students with their research projects.

Lori Lindsey has been the animal caretaker since 2003.

Kristi Gibson has been with the department as administrative assistant since 2013. Among her many duties, she assists the chair in coordinating information for hires and reviews, maintains the department office, assists with speaker arrangements, informs neuroscience majors regarding a variety of on- and off-campus opportunities, and helps prepare course catalog information.

Forrest Rose and **Dorothy Auble** continue to help with facilities management and departmental ordering, respectively.



Kristi, left, in the administrative office, and Gigi, right, in the neurophysiology lab.

NEUROSCIENCE MAJORS: SCENES FROM THE 2017 PICNIC

by Joy Udoh '19

THE NEUROSCIENCE MAJOR'S COMMITTEE held its annual departmental picnic last spring, and it was a success. Faculty and students came together to socialize and take a break from a busy semester. There was a variety of food for everyone, and students and professors enjoyed a friendly game of frisbee. A raffle was held, and eight people won baskets. The picnic promoted the great community that the neuroscience department has built, and I'm honored to be a part of it.

Clockwise, from above right: Neuro majors Zoe Swann '19, Hannah Jackel-Dewhurst '18, and Kate Van Pelt '18 tend the fire at the NMC picnic. A chalk creation by Caroline Beshers '18. Charles Ryan '17 and Zoe. Joy Udoh '19 and Zoe.



STUDENT AND FACULTY PUBLICATIONS

* denotes student researcher

Bailey HD *, Mullaney, AB *, Gibney, KD *, Kwakye, LD
"Audiovisual integration varies with stimulus and background complexity in a virtual environment: Towards a naturalistic model of multisensory integration." Under Review in *Experimental Brain Research*.

Barnes-Scott, ZP *, Hirabayashi, KK *, Papadakis, SL *, and Kwakye, LD (2017) "An Electroencephalography Investigation of the Effects of Attention on Crossmodal Temporal Acuity." *International Multisensory Research Forum, Nashville, TN*.

Bichell, Wegrzynowicz, Tipps, Bradle, Uhouse, Bryan, Horning, Fisher, Dudek, Halbesma, Umashanker, Stubbs, Holt, Kwakye, Tidball, Colbran, Aschner, Neely, Di Pardo, Maglione, Osmand, Bowman. Reduced bioavailable manganese causes striatal

urea cycle pathology in Huntington's disease mouse model. *Molecular Basis of Disease*, 2017.

Bohm-Levine N* and Thornton JE (2016). The memory-promoting effects of estradiol and low luteinizing hormone: Possible role of brain-derived neurotrophic factor. *Scientific abstract and poster presentation for the International Behavioral Neuroscience Society, Budapest, Hungary, June 2016*.

Burnham V.*, Sundby C.*, Laman-Maharg A.*, and Thornton J. (2017). Luteinizing Hormone acts at the hippocampus to dampen spatial memory. *Horm Beh* 89: 56-63.

Carter BS, Cortés-Campos C, *Chen X, McCammon JM, Sive HL. Validation of protein knockout in mutant zebrafish lines using in vitro translation assays. *Zebrafish* 2016.

Carter BS. "Project-based assessment and flipped classroom model in an undergraduate neuroscience lecture course." *Society for Neuroscience* 2016. San Diego, CA, November 2016.

*Chong C, *Jimenez J, McIlvin M, Saito M, and Kwakye GF. "Alpha-Synuclein enhances cadmium-induced neurotoxic insult and alters cadmium homeostasis in a dopaminergic cell model of Parkinson's disease". *NeuroTox Res.*, 2017.

Dean, CL *, Eggleston,*, KD Gibney*, E Aligbe*, M Blackwell*, LD Kwakye. "Auditory and visual distractors disrupt multisensory temporal acuity in the crossmodal temporal order judgment task." Under Review in *PLOS One*.

*Dominah GA, *McMinimy RA, *Kallon S, and Kwakye GF. "Acute exposure to chlorpyrifos causes oxidative stress via NADPH oxidase-dependent mechanism in a striatal cell model of Huntington's disease". *NeuroToxicology*, 2017.

Gibney KD, *Aligbe E, *Eggleston BA, *Nunes SR, *Kerkhoff WG, *Dean CD, Kwakye LD (2017). Visual Distractors Disrupt Audiovisual Integration Regardless of Stimulus Complexity. *Front. Integr. Neurosci.*

Krueger, P., van Vugt, M., Simen, P., Nystrom, L., Holmes, P. and Cohen, J. D. (in press). Evidence accumulation detected in BOLD signal using slow perceptual decision making. *Journal of Neuroscience Methods*.

Kwakye, LD, Taylor KA *, DiBiase, MH *, Rodriguez, JO* (2017) Seeing is Hearing: Integration of attended visual stimuli influence ambiguous auditory rhythm perception." *Biennial Conference of the Society for Music Perception and Cognition, San Diego, CA*.

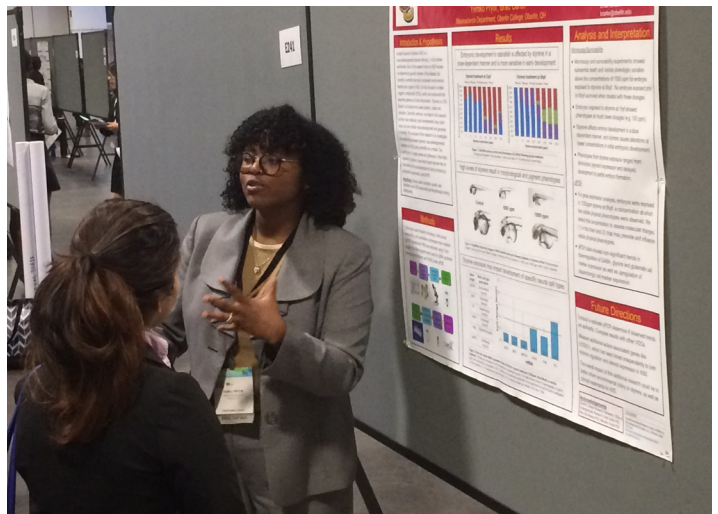
Kwakye GF, *McMinimy RA, Aschner M. "Disease-Toxicant Interactions in Parkinson's Disease Neuropathology." *Neurochem Res.*, 2016.

Sallay Kallon '17 worked under the mentorship of Gunnar Kwakye and was invited to give an oral presentation on her research project at the *Annual Biomedical Research Conference for Minority Students (ABRCMS) in Tampa, FL*. In addition, she was awarded the competitive full travel award and won the best undergraduate neuroscience oral presentation prize at ABRCMS in November 2016.

Mariani, M. M., T. Malm, R. Lamb, T. R. Jay, L. Neilson, B. Casali, L. Medarametla, and G. E. Landreth. Neuronally-directed effects of RXR activation in a mouse model of Alzheimer's disease. *Scientific Reports*, 2017, 7: 42270.

McGregor, C.*, Riordan A.*, and Thornton J. Estrogen and the

(Continued on p. 6)



From top: Brad Carter with students (l to r) Erin Ford, Nell Klimpert, Juvi Ruffatto, and Eoin Mullaney at the Midwest/Great Lakes Undergraduate Research Symposium in Neuroscience (mGluRs), Columbus, OH, October 2016. Yemko Pryor presents work in Brad Carter's lab at ABRCMS 2016. Dana Thomas, Juvi Ruffatto, and Yemko Pryor at ABRCMS 2016.

PUBLICATIONS, CONT,

cognitive symptoms of schizophrenia: Possible neuroprotective mechanisms. In revision.

*Mullaney E, Carter BS. Investigating environmental factors associated with autism spectrum disorder; effects of chromium on neurodevelopment in zebrafish. Oral presentation. *Oberlin College Celebration of Undergraduate Research (CUR)*, Oberlin, OH, October 2016.

*Mullaney E, Carter BS. Investigating environmental factors associated with autism spectrum disorder; effects of chromium on neurodevelopment in zebrafish. *2016 mGluRs Conference*. Columbus, OH, October 2016. (3rd place poster presentation award).

Paine TA, Swedlow N, Swetschinski L (2017). Decreasing GABA function within the medial prefrontal cortex or basolateral amygdala decreases sociability. *Behav Brain Res* 317:542-552.

*Pryor Y, *Ruffatto J, Carter BS. Neurodevelopmental effects of styrene on embryonic zebrafish. *ABRCMS 2016*. Tampa, FL, November 2016 (ABRCMS travel award winner, ABRCMS poster presentation award).

*Reeves E, *Sorrells J, *Mullaney E, Carter BS. Neural cell marker mRNA expression during zebrafish embryo development. *Oberlin College Celebration of Undergraduate Research (CUR)*, Oberlin, OH, October 2016. (Oberlin STRONG Scholars).

Riordan A.*, Schaler A.*, Paine T. and Thornton J. Luteinizing hormone and estradiol affect GABA function and memory loss in an animal model of schizophrenia. Submitted.

*Ruffatto J, Carter BS. Investigating environmental factors associated with autism spectrum disorder; effects of methylene chloride on neurodevelopment in zebrafish. *Annual Biomedical Research Conference for Minority Students (ABRCMS) 2016*.

Tampa, FL, November 2016 (ABRCMS travel award winner).

*Ruffatto J, Carter BS. Investigating environmental factors associated with autism spectrum disorder; effects of methylene chloride on neurodevelopment in zebrafish. *2016 mGluRs Conference*. Columbus, OH, October 2016.

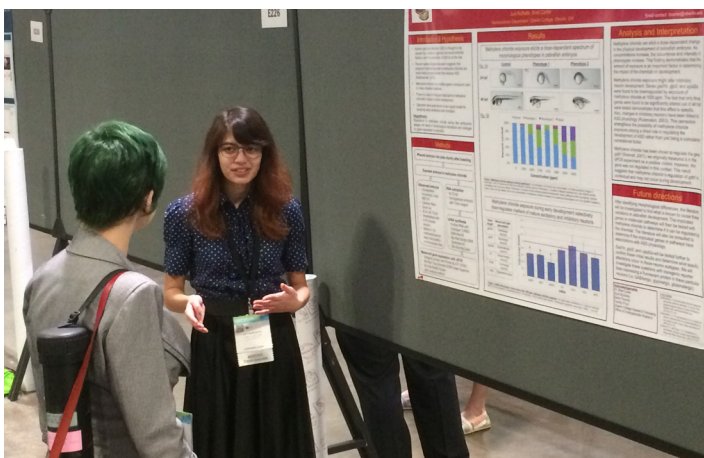
Simen, P. and Matell, M. (2016). How does time fly when we're having fun? *Science*, 354, 1231-1232. Perspective article previewing Soares, S., Atallah, B. V. and Paton, J. J. (2016), Midbrain dopamine neurons control judgment of time (2016), *Science*, 354, 1273-1277.

Swann, Z.* and Simen, P. (2016). Rhythmic modulation of the post-auricular muscle response in humans. *2016 mGluRs Conference*, Columbus, OH, October 2016. (Presentation Award winner).

Thornton JE, Chang-Weinberg J, Curley E, Natowicz R (2017). Lowering luteinizing hormone (LH) prior to hippocampal damage (in an Alzheimer's disease model) can mitigate the loss of spatial memory in female rats. *Scientific abstract and poster presentation for the International Behavioral Neuroscience Society*, Hiroshima Japan, June 2017.

Thornton JE, Curley E, Chang-Weinberg J, Natowicz R, Mariani M (2017). Lowering luteinizing hormone (LH) has preventative and restorative effects on spatial memory and neuron number in a rat Alzheimer's Disease model. *Scientific abstract and poster presentation for Society for Neuroscience Washington DC*, November 2017.

*Thomas D, Carter BS. Investigating environmental factors associated with autism spectrum disorder; effects of trichloroethylene on neurodevelopment in zebrafish. *ABRCMS 2016*. Tampa, FL, November 2016 (ABRCMS travel award winner).



From left: Juvy Ruffatto presents her research in Brad Carter's lab at ABRCMS 2016. Brad Carter (left) and Eoin Mullaney (right), at mGluRs 2016.

NATIONAL ACADEMY OF SCIENCES: REUNION AND SYMPOSIUM



OBERLIN COLLEGE HELD A REUNION and symposium in October 2016 for Oberlin alumni who are members of the prestigious National Academy of Sciences. Membership in the NAS is predicated on a career of outstanding achievement in science. Oberlin happens to be strikingly overrepresented—it has far more members in proportion to its student body population than any other institution in the United States. And three of those Oberlin alums are neuroscientists of great renown: Larry Squire '63, whose work has defined our understanding of memory systems in the brain; Robert Wurtz '58, who established the basis for studies of the primate visual and attentional systems; and Larry Zipursky '77, who has uncov-

ered fundamental cellular mechanisms that govern how the brain wires itself up.

The symposium, held in Craig Auditorium and the new Hotel at Oberlin, was a fascinating and inspiring exchange between truly great scientists and current students.

Above: Attendees of the National Academy of Sciences Reunion and Symposium in October 2016. From left: Larry Zipursky, Mike Loose, Willa Kerkhoff, Emma Parkins, Mina Huerta, Jacob Nadel, Nora Newcomb, Pedro Ribeira, Leslie Kwakye, Juan Rodriguez, Jackson Fried, Cassie Dean, Zoe Swann, Larry Squire, Jan Thornton, Bob Wurtz, Pat Simen.

CONGRATS TO OUR AWARD WINNERS!

THE NANCY ROBELL MEMORIAL PRIZE

Jessica Jimenez '17
Christine Khoury '17
Emma Parkins '17
Rachael McMinimy '17

NEUROSCIENCE DEPARTMENT PRIZE

Adam Chazin-Gray '17
Matthew DeBiase '16
Martin Mancini '16

NEURO DEPARTMENT SEMINARS

Julio Ramirez, Davidson College

Are broken brains doomed to dysfunction?

Robert Wurtz '58, National Eye Institute, NIH

Brain mechanisms for the two grand illusions of primate vision

Lital Ruderman, Affiliate Scholar, Oberlin College

Decision making under uncertainty in combat veterans with and without post-traumatic stress disorder

Carlos Brody, HHMI and Princeton University

What are the neural circuits that enable brains to make flexible decisions? Some studies using rats as a model system

Elena Chartoff, Harvard Medical/McLean Hospital

Neurobiological mechanisms of withdrawal from drugs of abuse

Charles Grob '72, Harbor-UCLA Med School

The use of a hallucinogen treatment model for advanced-cancer anxiety

Mark Spritzer, Middlebury College

Determining the impact of testosterone on spatial cognition through laboratory and field experiments with male rodents

MATT DIBIASE '16 ON NEUROSCIENCE AND MUSIC

by Pat Simen, Associate Professor of Neuroscience

I INTERVIEWED MATT DIBIASE '16, a neuroscience/jazz studies double-degree student, about his views on neuroscience, music, and the possible relations between them.

PS: *What relationship do you see between your neuroscience studies and your studies and performance of music?*

MD: There are a few ties I've found while at Oberlin between these two seemingly distant subjects. Many people don't realize it, but they're actually more intertwined than you'd think. The first major relationship I found early on in my Oberlin career was neurological music therapy. NMT is the use of targeted sounds to help patients restore brain function, most often associated with recovery from traumatic injuries and strokes. I was able to design a winter-term project my sophomore year shadowing an NMT at Spaulding Rehabilitation center in Boston, where therapist Brian Harris was practicing all major forms of NMT: 1) attention maintenance, 2) gait restoration, and 3) speech rehabilitation.

Aside from this clinical application of music to neuroscience, my studies of the brain at Oberlin also informed how I approach my music, especially in my practice routine. I often keep tight shifts in my practicing and take short and frequent breaks every 25 minutes, as recommended by the many resources I've come across on learning and memory. I have also named a few of my compositions after science-related terms (cortisol, magentamygdala, and ataxia to name a few). These concepts inspired much of the composing I was doing at Oberlin, especially during my third year. As a jazz musician, I've also become fascinated with improvisation and the creative brain, which seems to demand that we shut off the conscious monitoring that our brain so readily conducts from the dorsolateral PFC. This region, along with others in higher order attention maintenance, play important roles in creative thinking and achieving high level focus states like flow.

PS: *What was your favorite experience at Oberlin?*

MD: It's really hard to pick just one as a dual-degree student, so I'm going to briefly describe two. My gut reaction was the privilege to program a three-hour recital in the fall of my fifth year that celebrated my growth musically and personally alongside my favorite musicians, friends, and family. The recital managed to touch on some traditional jazz repertoire, an eight-piece fusion band I formed my junior year of all original music called Frisson, and a dance music set from my electronic music production project, Plexus (also all original music).

My second favorite opportunity was getting to design a curriculum alongside a visiting professor, Scott Swartzwelder, on music in the brain. It was really rewarding to see conservatory and arts and sciences students in the same room, one



Matt and bandmates (artwork by Flo DiBiase; logo by Matt).

explaining to another how an action potential works, and the other providing clarity on the definition of musical timbre for a future biochemist. The cross talk between the two institutions, especially with the strength of the neuro department and the world class conservatory, is something I hope to see more of in the future.

PS: *What are your future plans?*

MD: My immediate plans are to pursue my musical projects in either Boston (my hometown) or Chicago, where many Oberlin jazz majors have ended up since graduating. I've also been looking at a few lab related opportunities in Boston doing NMT research, but nothing has been solidified yet, and I'd be very happy performing and gigging as much as possible straight out of school while I have the time and energy. I do plan to keep updated with the neurosciences and the field of NMT regardless of what I end up doing, but music has been the most immediate passion peaker since 2015 for me.

PS: *Got any advice for neuroscience majors at Oberlin?*

MD: My biggest piece of advice would be to develop an important relationship with a faculty member. Getting involved in their research is ideal, but first and foremost a personal connection to someone in the field is the best thing you can

do for yourself if you're planning to find your niche or look to expand your web of connections further down the road. Surround yourself with the community of people with similar interests to your own, and if you don't know what those interests are, pick some and let them guide you in the right direction while you have the time. No one ever regrets gaining additional experience, whether it be discovering what motivates you, or ruling out what you'd avoid in the future.

PS: *Where can we find recordings of your music?*

MD: My music can be found most readily on my website:

mattdiasmusic.com. There you can find links to my three major projects: the Echoes jazz quartet, Frisson, and Plexus. Frisson's debut self-titled album released on February 1, 2017, can be found on all major providers, like Spotify, iTunes, amazon, bandcamp, and YouTube. Plexus is planning to drop its first album this May as a series of audiovisual compositions involving collaborations with dancers and visual artists, so stay tuned there! I'll be doing weekly video releases starting in late April into June up to the album release. Feel free to sign up for the newsletter on my website or like the Facebook pages for the projects!

NU RHO PSI HONOR SOCIETY: EVENTS AND NEW MEMBERS



MEMBERS OF NU RHO PSI and students at Oberlin came together on the second Saturdays of March and April to volunteer with the food distribution at Oberlin Community Services. This event highlighted the importance of engaging in our community and promoting a healthy society by increasing availability and access to healthy food. "It was a wonderful experience to be able to give back to the community," says Nora Newcomb '19.

In April, three neuroscience students, Jessica Jimenez '17, Joy Udoh '19, and Zoe Swann '19, presented TED-style talks at the third annual Student-Powered Lecture Series. They covered the topics of epigenetics in Alzheimer's disease, sleep, and adolescent glial development and romantic love. Neuroscience major Mina Huerta '17 described the event as "an educationally stimulating experience that allowed students to showcase their knowledge."

Nu Rho Psi hosted a Panel on Artificial Intelligence (AI) featuring Keith Downing, affiliate scholar with the neurosci-

ence department.; Adam Eck, assistant professor in computer science; and Pat Simen, assistant professor in neuroscience. The panel, moderated by Martin Mancini '17, discussed the problems that AI and machine learning may help us solve and exciting developments that are on the horizon. "The panelists did a good job of incorporating different perspectives. The unique background of each panelist was a major strength of this panel," says Jacob Nadel '19.

Nine new members were inducted into the Oberlin Chapter of the Nu Rho Psi Honor Society. Elizabeth Brauneis '18, Adam Chazin-Gray '17, Rachel Dan '18, Erin Ford '18, Jackson Fried '18, Nell Klimpert '18, Rachael McMinimy '17, Kira Scala '18, and Kate Van Pelt '18 joined the current members at the induction ceremony in May. Membership in the society recognizes excellence in neuroscience research and provides a platform for promoting educational and community outreach initiatives.

ALUMNI NOTES

Juliet Alla '06 will begin medical school at Oregon Health Sciences University in Portland.

Briana Carroll '11 writes: "I am graduating this semester with my PhD in neuroscience from Florida State University and have accepted a research position as a postdoctoral scholar in the Murray Sherman lab at the University of Chicago."

Sarah Cassella '09 will be a visiting assistant professor at Loras College. Sarah's plan is to help another new faculty member develop the neuro program into its own department over the next three years. Sarah will be teaching Hormones and Behavior.

Natasha Hays '77 writes: "I'm doing fine—I've been here [Olympia, Wash.] for almost a year. Previously I was in North Carolina. I retired from a state job as a developmental pediatrician, lost my husband to a brain tumor, had too big of a house and garden with too much upkeep, and was very [tired] of N.C. politics. Plus, my kids are on the West Coast. So it was destined. I'm working on building up a private practice seeing children with learning disabilities. It has been slow, but I think it's coming along."

Allison Jensen '92 writes: "What a wonderful treat to get such an extensive and exciting newsletter from the Department of Neuroscience. Either it's a new thing, or I just got on the mailing list. I was at Oberlin when you started, and, if I'm not mistaken, the major was fairly new for my graduating class of '92. I would so love to be able to attend a Society of Neuroscience reunion, as I feel my years at Oberlin were so formidable in who I have become. I am a pediatric ophthalmologist in Baltimore, where I am an associate professor at the University of Maryland and work at a large community hospital."

Sarah Leupen '93 writes to Jan Thornton: "It was fun to get the Obie neuroscience newsletter, as always. From that, at least, it looks like you're doing well! It's cool to see some faculty taking their students to the mGluRs conference that Jen Yates and I invented at Ohio Wesleyan—she has done an amazing job with the neuroscience program there, and I'm not surprised that mGluRs is still happening (though not always at OWU of course)." Sarah received a "Fulbright to do faculty development and training in evidence-based/scientific teaching methods at a med school in the Czech Republic, so the four of us are in Pilsen for the year. Tons of fun so far."

Sarah Allen McConnell '07 writes: "This year I joined the faculty in the Department of Neuroscience at the University of Rochester. Among other courses, I'm helping teach the undergraduate neuroscience lab. The cornerstone of my appointment is teaching Human Structure and Function, the big course in the fall for first-year medical students with lectures, histology

labs, and cadaver dissection. It is wild working alongside the faculty who taught me in that course nearly a decade ago. In January, I get to teach a weeklong boot camp neuroanatomy course with my PI before the spring semester commences, and in August I'll help teach a similar neuroanatomy lab for second-year medical students. In the spring I'll teach a section of the undergraduate neuroscience lab, and I'm designing a course on neuroprosthetics for neuroscience and biomedical engineering graduate students to begin in spring 2018."

Umra Omar '06 returned to Oberlin in March 2017 to give a premed program seminar titled "Safari Doctors: How One Obie is Changing the World." From the talk advertisement: *After graduating from Oberlin College with majors in neuroscience and psychology, Umra completed a master's degree in social justice and intercultural relations. She discussed the work she does with the group she founded, Safari Doctors, an organization that brings free medical services to remote, war-torn regions of Kenya. Umra was named a CNN Top 10 Hero of 2016 for her work.*

Laura Petrak '01 writes: "After almost 15 years in academia (Boston University and Harvard), I started working with a company [W. Nuhsbaum, Inc.] recently. It's a small company that sells Leica microscopes and other related software/hardware, and I specialize in high-end imaging applications like confocal, live cell imaging, automation, etc. It's so much different than being at a university (no surprise there), but it's fun, and I enjoy helping people with different backgrounds and experience levels."

Taylor Soderborg '10 writes: "I'm starting my fifth year in the MD/PhD program at the University of Colorado, which blows my mind that it's been that long! I switched away from neuro research into metabolism—I study the impact of maternal obesity on infant gut microbiome composition and how those alterations may predispose offspring to metabolic disease (I focus on NAFLD). The switch came because I've found a passion for OB/Gyn and wanted something more in the development area (although I'd like to return to neuro eventually). I do miss the brain and having read a ton of neat connections between the gut and the brain. I have collected these mice's brains and I may sneak in a little pilot project on them!"

Anrey Wang '12 writes: "Just wanted to share that I always love getting these neuroscience department newsletters. It's hard to believe that it's been five years since **Cindy [Getschow '12]** and I have graduated! I also love to see that Nu Rho Psi is still going strong! Cindy and I are doing well. We live in Portland, Ore., now. I've just starting my second year in a master's of counseling psychology program and, among many things, working on a thesis looking at how to use an innovative dialogue approach to foster wellness and prevent burnout among community mental health workers. Cindy started her own business in dog

training and walking in the last year, specializing in little dogs; her website: stumptownlittles.com.

Jeffrey Zahratka '10 is a new hire at Baldwin Wallace University with joint appointments in biology and neuroscience. He will teach Neurophysiology, Principles of Neuroscience, and mentor students in undergraduate research.

Shira Ziegler '08 writes: "After six years in a combined MD/PhD program [at Johns Hopkins], I will be defending my PhD thesis soon. My thesis has focused on understanding the pathogenesis of a rare genetic disorder of vascular calcification and developing a novel treatment strategy. I will then complete my last two years of medical school. I plan to pursue additional clinical training in pediatrics and genetics so that I can translate basic research findings to the clinic."

SEND US YOUR NEWS!

NeuroNews is a newsletter for alumni and friends of the Oberlin College Department of Neuroscience. Let us know some of the significant happenings in your lives. Send comments/news to: Kristi.Gibson@oberlin.edu or Jan.Thornton@oberlin.edu. **W:** www.oberlin.edu/nsci.

LOOSE RETIREMENT, CONT.

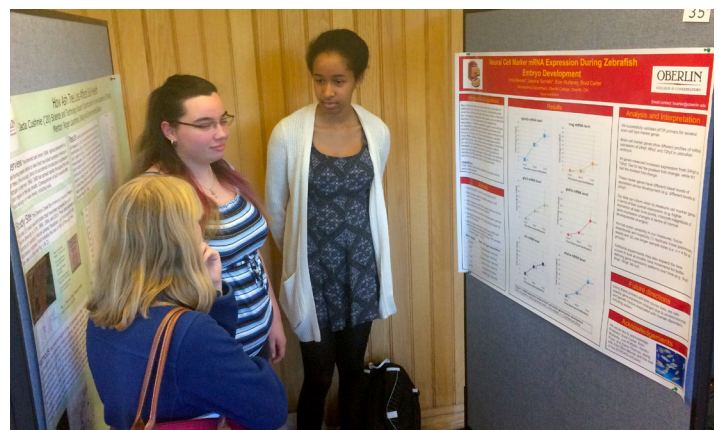
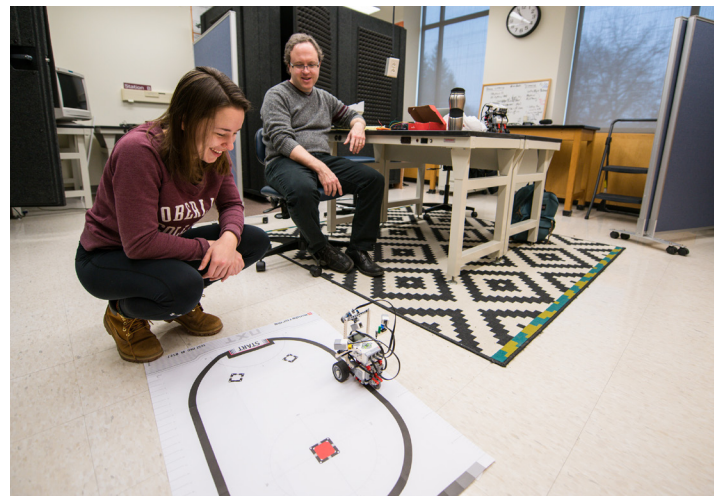


A 1992 issue of the Oberlin Observer features Loose with David Jacobs '92

observational skills. He likes to travel and hike and wants to learn more about plants, birds, and insects where he lives. He plans to read (or re-read) some of the great books. He also plans to continue his research. He wants to collect data online about questions related to decision-making, perhaps using artificial neural networks to analyze the data. For example he is interested in what information or characteristics of previous responses will predict a person's future response. He is also thinking about taking some courses in philosophy, Roman history or art history. We can surely predict Mike Loose's future response to life: He will enjoy it by focusing closely on it!

for what is most important in life overall, he says, "critical thinking is the single most important thing for students or anyone to learn in their adult life."

In the future, Mike plans to try to improve his own critical thinking and



From top: Jan Thornton and Hannah Rodgers '18 took part in Oberlin College's Day of Giving last spring. Kate Hull working with Lego MindStorms robot in Pat Simen's lab. Jasmine Sorrells (right) presents her poster. Monica Mariani with Zoe Swann and Jacob Nadel at the spring picnic.

GIFTS FOR 2016-17

THE DEPARTMENT OF NEUROSCIENCE is indebted to the individuals and families who have generously provided gifts to enhance our academic program. Your contributions have helped students complete their research projects and present their data at national meetings. They have also been used, in part, for the Neuroscience Prize to honor outstanding seniors. We are grateful for your financial support. A special thanks to Charles “Chuck” Snowdon ’63, who has generously contributed support for student research projects over the last few years.

If you would like to make a gift, please use the on-line donation form at www.oberlin.edu/giving/donate (please select “Departments” and then “Neuroscience” in the designation box).

You can also send a check payable to Oberlin College to the Office of Development, Oberlin College, 50 W. Lorain St., Oberlin OH, 44074. Please write “neuroscience department” in the memo line.

CONGRATULATIONS NEW GRADS!

We wish you the best of luck. Keep in touch!

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Marissa Buckley	Xincheng Li
Adam Chazin-Gray	Yujia Liu
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Morgan Daruwala	Rachael McMinimy
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