



TRIANGLE CHAPTER
SOCIETY FOR NEUROSCIENCE

THE TRIANGLE TRANSMITTER

Welcome New Council Members!

The Triangle SfN Chapter is proud to announce its 2018-2019 council members! Council members attend monthly chapter meetings, help to organize regional chapter events, and participate on chapter committee boards. These annually-elected positions are essential to our chapter's success! The Triangle SfN Committee thanks all past Council Members for their service in and welcomes our 8 amazing members!

-Dr. Kristen Ryan (NIEHS)

Triangle SfN Chapter 2018 – 2019 Council Members

Rachel Haake

Graduate Student, UNC-CH

Dr. Eric Harris

Retired Neuroscientist, Pharmaceutical
Industry

Dr. Andrew Hawkey

Postdoctoral Fellow, Duke

Sandra Kibble

Research Technician, Duke

Christina Lebonville

Graduate Student, UNC-CH

Dr. Antoniette Maldonado-Devincci

Assistant Professor of Psychology, NC
A&T

Dr. Sabrina Robertson

Assistant Professor, UNC-CH

Kylie Rock

Graduate Student, NCSU

SEPTEMBER 2018

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The Triangle Transmitter is
published by the Triangle Chapter
of SfN.

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Sandra Kibble

Chapter President
Dr. John Meitzen

President-Elect
Dr. Amir Rezvani

Chapter Representative
Dr. Kati Healey

Secretary/Treasurer
Dr. Meghan Rebuli

Anniversary Party Review

On July 23rd, Triangle SfN members gathered at RTP Headquarters to celebrate the chapter's 4th anniversary. Members reflected upon the chapter's achievements in the 2017-2018 year, including the 4th Annual Spring Meeting, Brain Night at the NC Museum for Natural Sciences, the UNC Science Expo and advancements in our science policy advocacy such as support and attendance by notable state and local representative at Triangle SfN events.

Members socialized during a reception featuring catering from Chapel Hill's Mediterranean Deli, drinks, and live music provided by Tim and Susan Wells of the Music Maker Relief Foundation. Following refreshments attendees gathered for a presentation from the committee chairs on the year's accomplishments.

New this year was an artwork competition to be displayed in the upcoming 2019 Spring Meeting advertising. Attendees voted on 5 submissions from Andrew Hawkey (Duke), Sierra Hodges (Duke), Sandra Kibble (Duke), and Hannah Yoder (NIEHS). Of all the impressive artwork submissions, Hannah Yoder won first prize (\$50 Amazon giftcard and a Triangle SfN T-shirt) and Sierra Hodges won the runner up prize (\$25 Amazon giftcard and Triangle SfN T-shirt).

The party also celebrated Dr. Shannon Farris (NIEHS), who will be joining the faculty at Virginia Tech Carilion Research Institute as an Assistant Professor this fall, as well as president-elect Dr. Amir Rezvani's (Duke) ~37th birthday.

Following the reception, the executive board and committee chairs welcomed new committee chairs and members, and planned upcoming events for the 2018-19 calendar year. The chapter will be partnering with Music Maker Relief Foundation to host an event celebrating music and neuroscience, with an aim to inform attendees on voter registration and voting early or as an absentee.

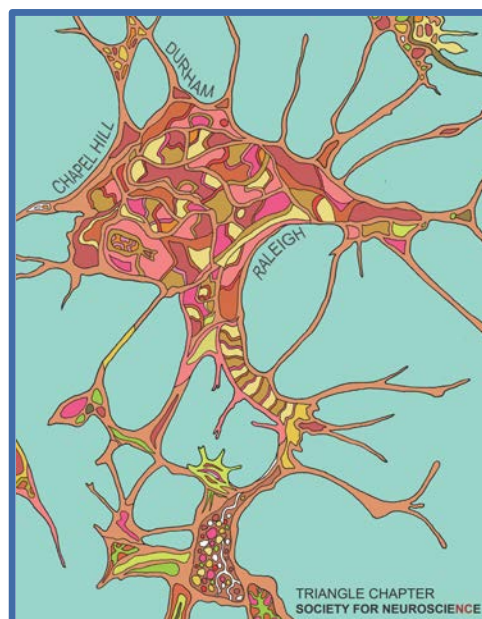
-Dr. Deirdre Rodeberg (UNC-CH)



Dr. Amir Rezvani (Duke) (left) & Dr. Shannon Farris (NIEHS) (right)
(PC: Dr. Kati Healey (Duke))



Attendees of the Anniversary Party! (PC: Dr. Kati Healey (Duke))



Winning artwork by Hannah Yoder (NIEHS)

4th Annual Spring Meeting

The Triangle Chapter of the Society for Neuroscience (Triangle SfN) continued its tradition of presenting leading Triangle research and incorporating professional development activities in their annual Spring Meeting on May 24th at the Embassy Suites Raleigh Durham RTP. The chapter was sponsored by companies near and far, as well as by grants from Society of Neuroscience and National Institute of Environmental Health Sciences (NIEHS). The event had over 200 registered attendees from 6 local universities, NIEHS, and other organizations.

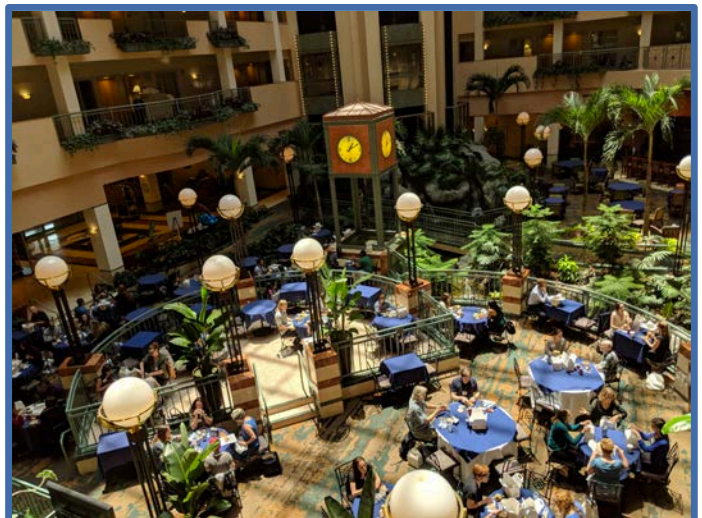
Three distinguished local neuroscientists presented their innovative research representative of the unparalleled work being conducted in the Triangle: Dr. Alison Adcock (Duke), Dr. Heather Patisaul (NCSU), and Dr. Ben Philpot (UNC-CH). The chapter invited Dr. Patricia Janak (Johns Hopkins University) to give the keynote lecture. Dr. Janak is a formidable neuroscientist that has led the field in behavioral and neural mechanisms behind reward associations and learning.

Opportunities for networking were abundant throughout the meeting. The two poster sessions showcased neuroscience research being conducted throughout the Triangle. During the luncheon in the tropical atrium of the Embassy Suites, attendees were encouraged to participate in roundtable discussions on topics ranging from career paths at small, primarily undergraduate institutions to the complexity of open source publishing. The chapter brought in experts to lead the discussions from institutions throughout the Triangle. Ms. Ciara Healy, Psychology and Neuroscience librarian at Duke, lead a discussion on open source publishing. Triangle SfN Science Policy Chair Dr. Ryan Bell (Duke) discussed science policy advocacy. Dr. Gregory Cole (NCCU) and Dr. Eric Bauer (Elon) answered questions on academic careers at primarily undergraduate institutions. The event culminated in a reception, where attendees mingled amongst the posters with beverages and appetizers.

-Dr. Kati Healey (Duke)



From left to right: Dr. Amir Rezvani (Duke), Dr. John Meitzen (NCSU), Dr. Patricia Jensen (NIEHS), Dr. Shannon Farris (NIEHS) (PC: Dr. Kati Healey (Duke))



Topic tables at lunch during the 4th Annual Meeting (PC: Dr. Kati Healey (Duke))

Science Policy Update

During this year's annual meeting the Science Policy Committee hosted several policy-influencers from both state and federal offices. Members of the Science Policy Committee were on hand to give tours of posters and vendors and connect these visitors with local researchers. Those in attendance included: NC Representative Joe John (NC House 40), Christina Piard of US Representative G. K. Butterfield's office (NC1), Brooke Fleming from US Representative George Holding's office (NC2), Tracy Lovett from US Representative David Price's office (NC4), and Dr. John Hardin, Executive Director for the North Carolina Board of Science, Technology & Innovation.



Dr. Ryan Bell (Duke), Christina Lebonville (UNC-CH), & Dr. Sarah Banducci (Banducci Science Consulting, LLC) with Dr. John Hardin (Executive Director for the North Carolina Board of Science, Technology & Innovation) (PC: Dr. Ryan Bell (Duke))

Direct engagement with policymakers allows us to showcase the research being done in NC to address public health issues like the opioid crisis and neurodegenerative disorders. By making research accessible to non-technical audiences, we are able to highlight the role of science and technology on the state economy, as well as emphasize how fundamental federal funding is to scientific research and economic growth in NC.

As always, the Science Policy Committee is looking for more members interested in connecting with policy makers, researching current topics, and discussing a shared interest in science policy. If that might be you, send us an email at trianglesfnscipol@gmail.com.

-Dr. Ryan Bell (Duke)



Dr. Ryan Bell (Duke) (left), & Katie McKay (Vanderbilt) (center) with Christina Piard of US Representative G. K. Butterfield's office (NC1) (right) (PC: Dr. Ryan Bell (Duke))



Dr. Ryan Bell (Duke) (right) & Dr. Sarah Banducci (Banducci Science Consulting, LLC) (left) with NC Representative Joe John (NC House 40)

Neurons, Brains, & Fun at the Museum!

The annual Brain Night event at the NC Museum for Natural Sciences was a tremendous success! This year's attendance count was a record 519 people, a ~67% increase in attendance from last year. Visitors ranged from toddlers to senior citizens. There were 24 tables of exhibits from NCSU, UNC-CH, Duke, the Triangle SfN, the Brain Injury Association, and Alliance Behavioral Healthcare. Students and postdocs gave talks in the avant-garde Globe Theater to a packed audience. Keynote speaker Jeffrey Dr. Lichtman from Harvard University presented a riveting Science Café talk about plasticity of wiring diagrams in the brain, which drew an overflowing crowd. Special thanks to all of the undergraduates, graduate students, post-docs, professors, technicians, alumni, and volunteers who created and staffed the exhibits.

Thanks to Drs. John Meitzen, Scott Belcher, and Lisa McGraw for serving as co-organizers and to Megan Serr for being our coordinator. Thanks also to Katey Ahman and the museum staff. We are looking forward to celebrating this event next year!

-Dr. Robert Anholt (Keck Center for Behavioral Biology, NCSU)



Dr. Tom Wason (NCSU) shares the joy of neuroscience at Brain Night 2018. (PC: Dr. Robert Anholt (NCSU))



David Dorris (NCSU) presenting in the lab coat to an attendee of the event (PC: Dr. Robert Anholt (NCSU))



Meitzen lab (NCSU) and Dr. Tom Wason (NCSU) explaining the mysteries of the brain. Look at all those attendees! (PC: Dr. Robert Anholt (NCSU))



Dr. Michael Cowley and laboratory (NCSU) (PC: Dr. Robert Anholt (NCSU))

Making Connections: Brain Night and Connectomics

Brain Awareness Week was a resounding success this year, featuring a well-attended Brain Day celebration filled with brain and behavior-themed exhibits and two delightful lectures by Harvard neuroscientist Dr. Jeff Lichtman. In his research seminar, “Does Connectomics Make Sense,” Lichtman placed his groundbreaking work in neural imaging within the greater context of how we approach scientific understanding. His “Science U” describes a process by which we begin at an observable phenomenon, reduce the phenomenon down to component parts, and then return to a holistic understanding through synthesis of those component parts. Much as genomics is the synthesis of concepts stemming from heritable traits, connectomics is the synthesis of neuroscience, with the goal of cataloging all cell types present in the brain and developing an understanding of canonical circuits at the level of the synapse.



Dr. Jeff Lichtman (Harvard University) (Photo courtesy of Dr. Jeff Lichtman's lab website)

Ultimately, Lichtman and his colleagues hope to use his enormous brain imaging data sets to seek new biological connections and test the long-held axioms developed through the reductive scientific processes that occupy the beginning of the “Science U.” In addition to neurobiologists, the Lichtman lab is home to computer scientists and engineers who have developed revolutionary tissue processing systems that create strips of 30nm thick brain slices, almost like a film reel. These sections are imaged by a state-of-the-art electron microscope using multi-scanning lasers, allowing a task that would have taken 17 years to now take 6 months.

So far, the imaging efforts have already begun to provide insight into complexity in neuronal connections. One finding is that many axons make multiple connections to the same dendrites, which may indicate that synapses may be regulated by number, rather than strength at the connection site. For his public lecture, “Mapping the Brain’s Wiring Diagram,” Lichtman shared an accessible glimpse at how the brain sets its connections as we learn and grow into adulthood. The ability of children to pick up new tasks was illustrated by a humorous example of a man who took many months to learn how to ride a “backwards bike,” and his son who picked it up within a matter of weeks. The adult had a difficult time switching between the two tasks, yet his son did not.

The answer to this, Lichtman explained, can be found in structural differences in the connections between motor neurons and muscle at neuromuscular junctions. Through a series of beautiful color images created through his pioneering technique “brainbow,” the audience were shown how initially, all the neurons try to connect to as many muscle fibers as they can. As we get older, each muscle fiber chooses only one neuron to connect with, limiting and strengthening its identity. By coloring each neuron a different color and imaging these processes over time, we could witness one neuron “winning” and the other retreating from the muscle target at the neuromuscular junction. Each neuron ‘wins’ some battles and ‘loses’ others, allowing for every point of muscle innervation to be different from each other, even for the same animal on opposite sides of the body! Lichtman ended his talk by stressing that while we may be reducing potential along the way, the ‘pruning of our wiring diagrams’ is the process that allows us to match our skills to the world around us.

-Emily Moore (Keck Center for Behavioral Biology, NCSU)

North Carolina Science Expo

As part of the North Carolina Science Festival, the biggest celebration of science in the nation, the UNC Science Expo brought the NC community closer to science in a big way. On Saturday, April 14th, Triangle SfN and members of the Outreach committee joined over 100 exhibits with hands-on experiments and science demonstrations. This was the first time Triangle SfN itself featured booths at this event, and people really enjoyed what we had to offer. The theme was visual illusions, which drew in large crowds of the curious. In addition to wow'ing participants with the ways our eyes trick us, the exhibit focused on why it's important to know about these "brain failures" and what these illusions teach us about the brain. We also featured an "eggcellent" activity showing how our brains are protected by floating in cerebrospinal fluid and what happens when these protections are not in place (spoiler alert: we smashed many egg "brains"). For the kids (and more playful adults) we had a build-your-own pipe cleaner neuron station. In addition, Outreach committee members from UNC, Dr. Marsha Penner of the Psychology and Neuroscience Department, and Dr. Donita Robinson of the Bowles Alcohol Center, hosted booths that featured a brain-themed escape room experience for kids and families, activities on reaction times using Backyard Brains demos, and activities exploring the effects of underage drinking on the brain.

Thank you to everyone who planned activities and volunteered!

-Christina Lebonville (UNC-CH)



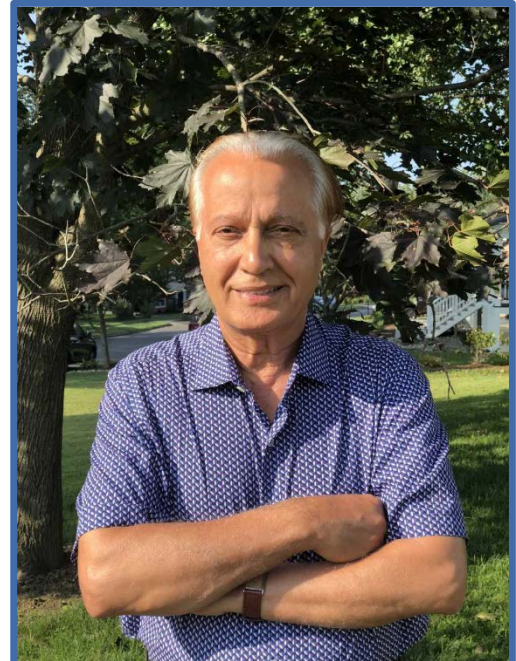
Pictured: Dr. Ju-Ahng Lee (NCCU), Dr. Deirdre Rodeberg (UNC-CH), Christina Lebonville (UNC-CH), Dr. Eric Harris (Osher Lifelong Learning Institutes at Duke and NC State), Jackie Paniccia (UNC-CH), Rachel Haake (UNC-CH), Leslie Wilson (NCSU). Not Pictured: Kylie Rock (NCSU), Dr. Stacey Robinson (UNC-CH) (PC: Dr. Deirdre Rodeberg (UNC-CH))

Congratulations to our President-Elect, Dr. Amir Rezvani!

Dr. Amir Rezvani is a Professor in the Department of Psychiatry and Behavioral Sciences and Department of Psychology and Neuroscience at Duke University. He is also Associate Director of the Addiction Division at Duke. At Duke, Dr. Rezvani educates through teaching, workshops, seminars and mentoring. He also conducts world-class research on addiction to alcohol, nicotine and other drugs of abuse using rodent models.

Rezvani has had a strong commitment to the Triangle SfN chapter since it was reinstated back in 2014, where he served as Chapter President from 2014-2016. His efforts have contributed to the chapter growth of nearly 500 members, annual Spring Meetings in Research Triangle Park, and support in numerous outreach activities over the years. Rezvani will now serve as the President-Elect for 2018-2020 and his vision for the Chapter includes:

1. Enhancing the communication between neuroscientists in the area
2. Promoting and enhancing our chapter involvement with all universities and scientific institutions in the Triangle area
3. Promoting and enhancing the involvement of undergraduate and graduate students in our chapter activities
4. Educating the public about the importance of neuroscience research and mental health
5. Educating our policy makers about the role of research in neuroscience in enhancing our well-being



Dr. Amir Rezvani (Duke) (PC:Azadeh Rezvani)

-Dr. Kristen Ryan (NIEHS)

Mark Your Calendar for These Upcoming Events!



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Monday, November 12, 2018

4:00 - 5:00 pm
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Reception to follow from 5:00 - 6:00 pm

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Dr. Susan Tapert

Professor
University of California San Diego
Department of Psychiatry

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T. K. Li, MD

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NORTH CAROLINA TRIANGLE CHAPTER
SOCIETY FOR NEUROSCIENCE

MEMBERSHIP INFORMATION

Annual Dues:

Regular Membership: \$20.00/year or \$50.00/3 years

Student Membership: \$5.00/year or \$12.00/3 years

Partner Membership: \$25.00/year or \$60.00/3 years

Membership in Triangle SfN
does not require membership in
National SfN

TO RENEW OR MANAGE YOUR MEMBERSHIP, VISIT US ONLINE AT

www.trianglesfn.org

Keep in Touch!

General questions and comments:

TriangleSfNChapter@gmail.com

Communications committee:

TriangleSfNNews@gmail.com

Twitter: [@Triangle_SfN](https://twitter.com/Triangle_SfN)

Website: <http://www.trianglesfn.org>

Facebook Page:

facebook.com/TriangleSfN/

Facebook Group:

facebook.com/groups/trianglesfn

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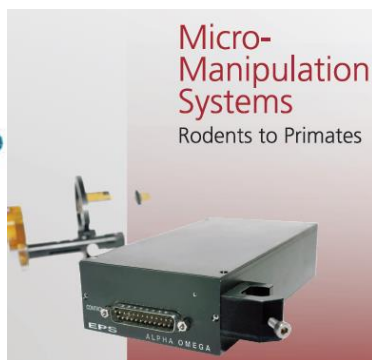


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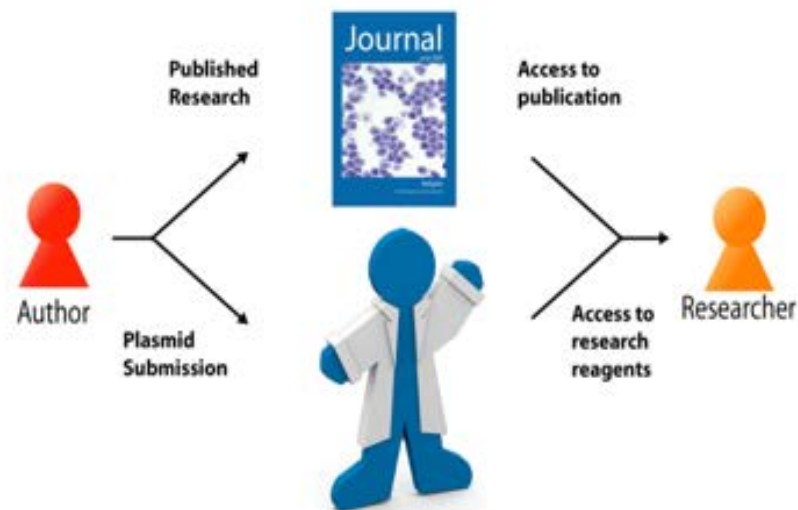


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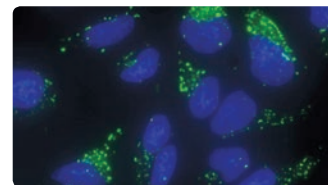
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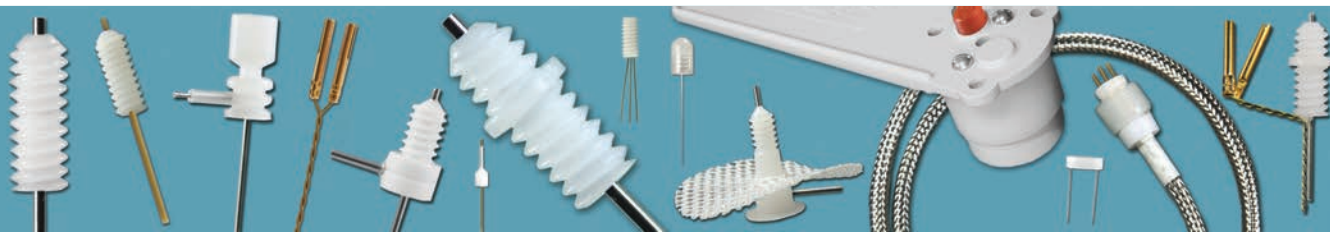
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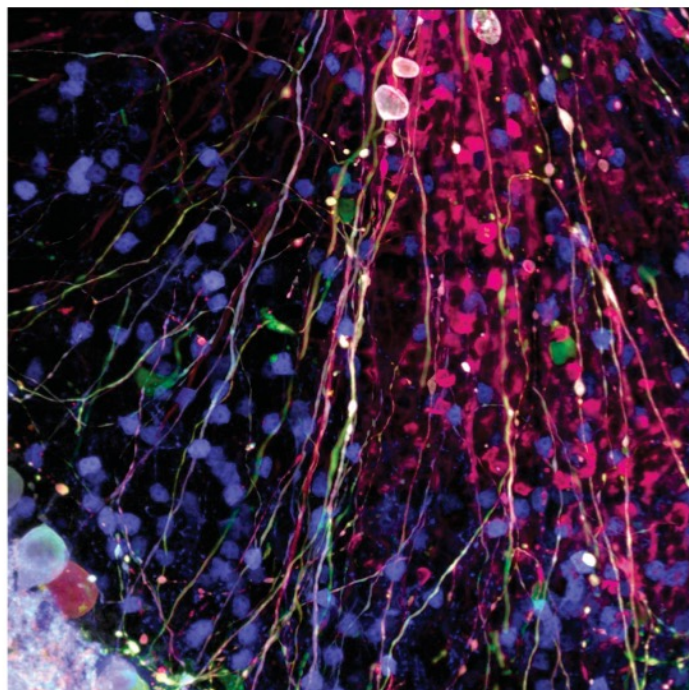
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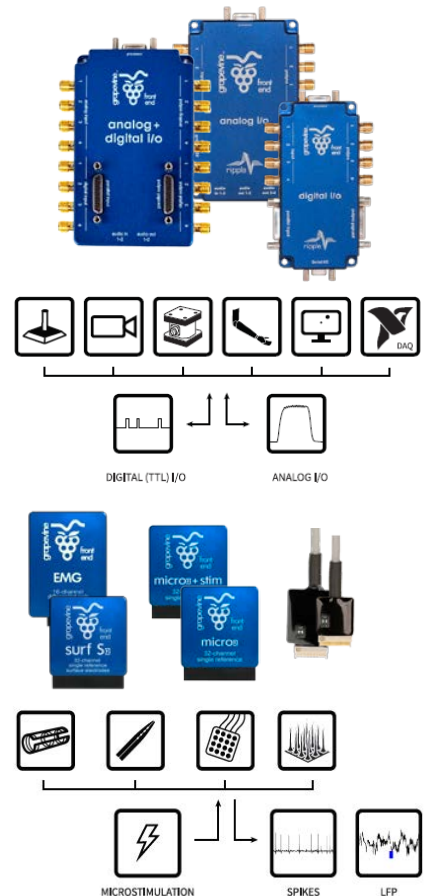
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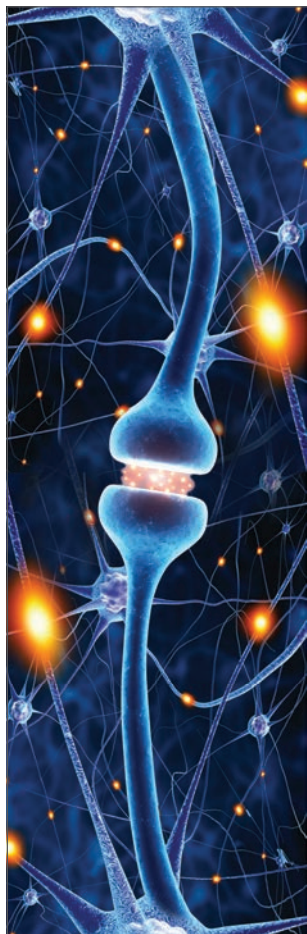


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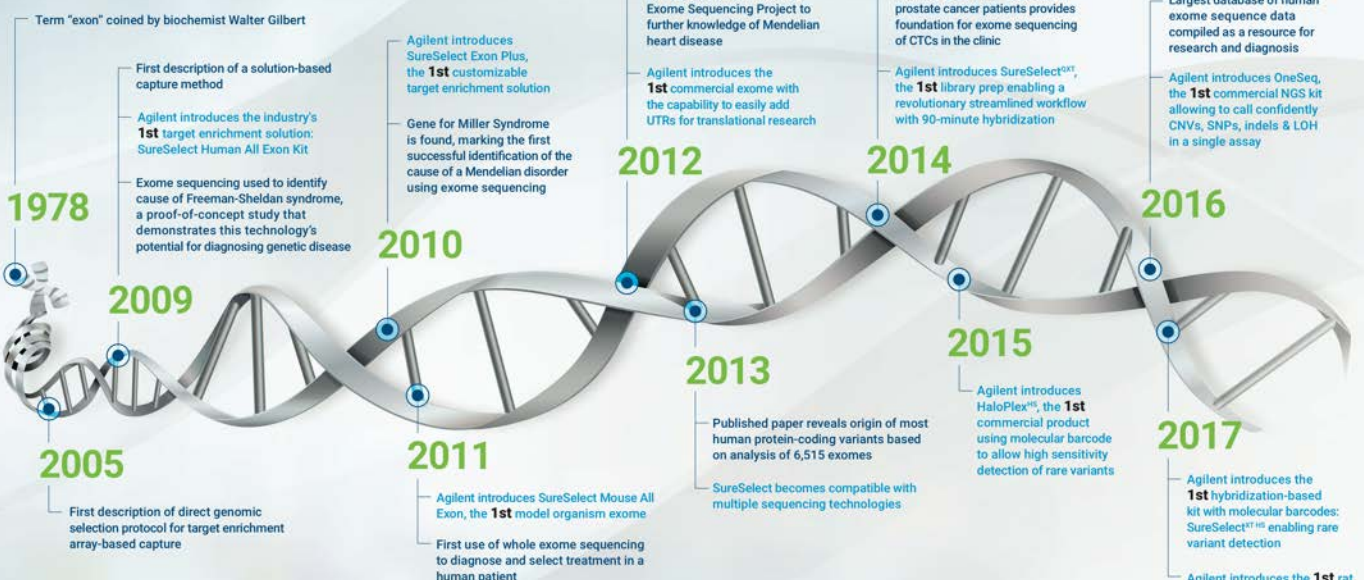
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Shaping Exome Sequencing



References

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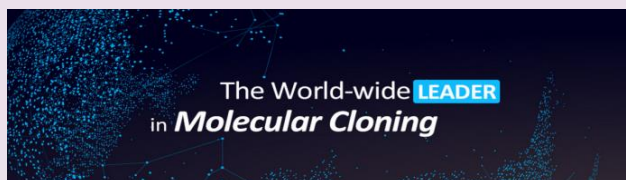
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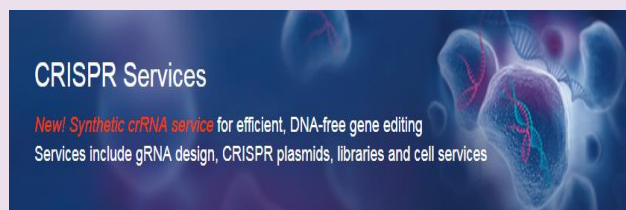
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