# Erika Calvo-Ochoa, Ph.D. Curriculum vitae

Hope College 35 E. 12th St. Schaap Science Center 2019 Holland, MI 49423 *calvoochoa* @hope.edu

CURRENT POSITION	
2020 – present	Assistant Professor of Biology and Neuroscience
EDUCATION	
2015	Ph.D. in Biomedical Sciences. Universidad Nacional Autonoma de Mexico (UNAM)
	Dissertation: "Hippocampal insulin resistance, structural and functional alterations due to
	high-fat-and-fructose diet feeding". Advisor: Clorinda Arias
	Graduated with Honors. Grade: 9.77/10, equivalent to 4.0 GPA.
2008	B.Sc. in Basic Biomedical Research. School of Medicine, Universidad Nacional
	Autonoma de Mexico. Dissertation: "Adrenergic $\alpha_{1D}$ receptor desensitization by EGF, PDGF
	and insulin receptors". Advisor: Adolfo Garcia-Sainz
	Graduated with Honors. Grade: 9.29/10, equivalent to 4.0 GPA

ACADEMIC APPOIN	ITMENTS
2018 – 2020	NSF Postdoctoral Research Fellow and Associate Graduate Faculty.
	Western Michigan University, Kalamazoo, MI
2019	IBRO-RIKEN CBS Summer Intern Fellow. RIKEN Center for Brain Science, Wako,
	Japan
2017 – 2018	Instructor. Western Michigan University, Kalamazoo, MI
2011 – 2015	Doctoral Research Fellow. UNAM, Mexico City, Mexico
2009 – 2010	Research Assistant. Albert Einstein College of Medicine, New York City, NY
2007 – 2008	Undergraduate Research Fellow. UNAM, Mexico City, Mexico

RESEARCH EXPERIENC	E
2019	IBRO-RIKEN CBS Summer Intern Fellow. RIKEN Center for Brain Science, Wako
	Japan. Advisor: Yoshihiro Yoshihara. Topic: Olfactory regeneration in zebrafish
2018 – present	Postdoctoral Research Fellow. Western Michigan University, Kalamazoo, MI
	Advisor: Christine Byrd-Jacobs. Topic: Neurogenesis and repair in zebrafish brain
2010 – 2015	Doctoral Research Fellow. Universidad Nacional Autonoma de Mexico, Mexico
	Advisor: Clorinda Arias. Topic: Neurodegeneration due to fatty acid exposure
2010	Visiting student. Albert Einstein College of Medicine, New York City, NY
	PI: Roger Gutierrez-Juarez. Topic: Insulin resistance and metabolism
2009 – 2010	Research Assistant. Albert Einstein College of Medicine, New York City, NY
	PI: Bryen Jordan. Topic: Synapse-to-nucleus communication

Calvo-Ochoa CV

Undergraduate Research Fellow. Universidad Nacional Autonoma de Mexico

- **2007 2008** Advisor: Adolfo Garcia-Sainz. Topic: Adrenergic α<sub>1D</sub> receptor desensitization
- 2006 2007 PI: Imelda Lopez-Villasenor. Topic: Molecular biology of *Trichomonas vaginalis*
- 2005 2006 PI: Rene Drucker-Colin. Topic: Neurogenesis in Parkinson's disease
- 2004 2005 PI: Enrique Ortega-Soto. Topic: Signal transduction of Fcγ receptors

#### PEER-REVIEWED JOURNAL PUBLICATIONS

- 1. Calvo-Ochoa E., Byrd-Jacobs, C. A., Fuss, SH. " Constitutive neuronal turnover and regenerative capacity of the zebrafish olfactory system". *Cell and tissue research.* 2020. Nov 27. doi: 10.1007/s00441-020-03334-2.*Invited manuscript*
- **2. Calvo-Ochoa E.**, Byrd-Jacobs, C. A. "The olfactory system of zebrafish as a model for the study of neurotoxicity and injury: implications for neuroplasticity and disease". *International Journal of Molecular Sciences*. 2019, 20(7), 1639. *Invited manuscript*
- 3. Barón-Mendoza I., García O., Calvo-Ochoa E., Rebollar-García J. O., Garzón-Cortés D., Haro-Valencia R., González-Arenas A. "Alterations in neuronal cytoskeletal and astrocytic proteins content in the brain of the autisticlike mouse strain C58/J". *Neuroscience Letters*. 2018 24(682):32-38
- 4. Calvo-Ochoa, E., Sánchez-Alegría, K., Gómez-Inclán, C., Ferrera, P., Arias, C. "Palmitic acid stimulates energy metabolism and inhibits insulin/PI3K/AKT signaling in differentiated human neuroblastoma cells: the role of mTOR activation and mitochondrial ROS production". *Neurochemistry International*, 2017. 11:75-83.
- **5. Calvo-Ochoa, E.,** Heras-Sandoval, D., Arias, C. "Diabetes tipo 3: resistencia a insulina y enfermedad de Alzheimer". Archivos de Neurociencias, 2016. 21(1):83-87. Invited review.
- Tindi, J., Chávez, A., Cvejic, S., Calvo-Ochoa, E., Castillo, P., Jordan, B. "ANKS1B Gene Product AIDA-1 Controls Hippocampal Synaptic Transmission by Regulating GluN2B Subunit Localization". *Journal of Neuroscience*, 2015. 35(24): 8986-8996. PMC4469732
- 7. Calvo-Ochoa, E. and Arias, C. "Cellular and metabolic alterations in the hippocampus caused by insulin signaling dysfunction and its association with cognitive impairment during aging and Alzheimer's disease. Animal models of study", *Diabetes/Metabolism Research and Reviews*, 2015 31(1):1-13.
- 8. Calvo-Ochoa, E., Hernández-Ortega, K., Ferrera, P., Morimoto, S., Arias, C. "Short-term high-fat-and-fructose feeding produces insulin signaling alterations, dendritic and synaptic loss and astroglial response in the rat hippocampus", *Journal of Cerebral Blood Flow and Metabolism*, 2014. 34:1001-8.
- 9. Rodríguez-Pérez, C. E., Calvo-Ochoa, E., Kalashnikova, E. V., Reyes-Cruz, G., Romero-Ávila, M. T., & García-Sáinz, J. A., "Receptor tyrosine kinases regulate α1D-adrenoceptor signaling properties: Phosphorylation and desensitization", *The International Journal of Biochemistry & Cell Biology*, 2009. 41(6):1276-83.

#### FORTHCOMING JOURNAL PUBLICATIONS

**1. Calvo-Ochoa, E.,** et al. "Regeneration and structural reorganization of the olfactory system of zebrafish following excitotoxic damage" (*manuscript in preparation*)

#### **CURRENT AND PAST FUNDING**

2018-2020 "The role of neurogenesis in the functional recovery and morphological reorganization of the zebrafish olfactory bulb following lesion" Erika Calvo-Ochoa, PI. National Science Foundation, NSF Postdoctoral Research Fellowship in Biology. **\$138,000.00** 

#### PROPOSALS UNDER REVIEW AND DECLINED

2020 "Ecotoxicity of Pb/Hg/Cd-free Quantum Dots: Evaluation of their transformation in the environment, bioaccumulation and behavioral effects in zebrafish and the house sparrow" Natalia Gonzalez-Pech, PI, Erika Calvo-Ochoa, co-PI, Kelly Ronald, co-PI. Samsung Global Research Outreach (GRO) \$150,000.00. Declined.

## AWARDS, FELLOWSHIPS AND RECOGNITIONS

2019	IBRO-RIKEN CBS Summer Internship Program. RIKEN CBS, Wako, Japan. \$3,000.00
2019	AChemS Travel Fellowship. Association of Chemosensory Sciences. \$1,200.00
2018	NSF Postdoctoral Research Fellowship in Biology. National Science Foundation \$138,000.00
2015	Obtained Doctoral Degree With Honors. UNAM
2015	Best Session Poster Award. 22 <sup>nd</sup> ISCOMS, Netherlands
2015	Scholar Achievement Award. Graduate School, UNAM. \$1,500.00
2014	Scholar Achievement Award. Graduate School, UNAM. \$1,500.00
2013	Travel Fellowship. Doctoral Program in Biomedical Science, UNAM. \$1,000.00
2012	Travel Fellowship. Doctoral Program in Biomedical Science, UNAM. \$1,000.00
2011	Doctoral Fellowship. CONACyT (Mexican Council of Science and Technology). \$50,000.00
2008	Obtained Baccalaureate Degree with Honors. UNAM
2008	Undergraduate research fellowship. CONACyT. \$1,000.00
2008	Academic Achievement Award 2007-2008 Year. UNAM
2008	1st place Student Award 2007-2008 Year. School of Medicine, UNAM

#### TEACHING

Hope College

NSCI 211 Introduction to Neuroscience and lab. Spring 2021

NSCI 312 Neuroanatomy and Neurophysiology and lab. Designed curriculum and taught course. Fall 2020

• Western Michigan University

BIOS 5180 Endocrinology. Taught course. Spring 2020

BIOS 5180 Endocrinology. Designed curriculum and taught course. Spring 2019

BIOS 1910 Intro to Human Biology and Anatomy lab. Taught two lab sections. Spring 2018

BIOS 1910 Intro to Human Biology and Anatomy lab. Taught two lab sections. Fall 2016

• Universidad Nacional Autonoma de Mexico

BIOCHEM 400 Human pathology. Designed curriculum and taught course. Fall 2014
BIOCHEM 500 Endocrinology. Invited lecturer of "Metabolism of carbohydrates and fats". Fall 2014
BIOS 300 Cell biology. Designed curriculum and taught course and lab. Spring 2011
BIOS 300 Cell biology lab. Designed lab exercises and taught one section. Spring 2011
BIOMED 500 Signal Transduction. Graduate program in Biological Sciences. Teaching assistant. Fall 2018
BIOMED 700 Signal Transduction in Neurosciences. PhD in Biomedical Sciences. Teaching assistant. Fall 2018

#### MENTORING

- 2020
   Sydney Chen. Biomedical Science Major Undergraduate, WMU. Sydney joined the Byrd lab as a freshman, and I have been closely working with her in lab techniques and experimental design. Based on her lab performance during her first semester, Sydney was awarded an Undergraduate Research and Creative Scholarship Excellence Award from WMU.
- **2020** Bridget Salazar. Biomedical Science Major Undergraduate, WMU. Bridget joined the Byrd lab to work with me in an 8-week internship sponsored by WMU's Latino association, CAMP.
- 2019 2020 Bonnie Ebendick-Corpus. Doctoral program in Biomedical Sciences, WMU. Bonnie is a first-year student at the Byrd-Jacobs lab. I have been closely working with her in lab techniques and experimental design.
- 2019 Maria Rodrigues Soares. Biomedical Science Major Undergraduate, WMU. Maria was a student in my Endocrinology course, and I recruited her to work as an undergraduate student in Dr. Byrd's lab during her senior year. She collaborated on my postdoctoral project.
- 2018 2019
   Michelle Morales.
   Biomedical Science Major Undergraduate, WMU.
   Michelle was a student in my Anatomy lab in 2017 and I recruited her to work as an undergraduate student in Dr.
   Byrd's lab during her freshman year.

   her freshman year.
   She collaborated on my postdoctoral project.
   Michelle was awarded an NSF Michigan Alliance for Minority Participation professional development award to attending the LXI AChemS meeting, where I presented my postdoctoral project results, to which she contributed.
- 2018 2020 Mamoon Ali. Masters in Science Program, WMU. Mamoon is a second year student at the Byrd-Jacobs lab. I have been closely working with him in lab techniques, experimental design, data analysis, scientific writing and poster presentation.
- 2014 2015 Cecilia Gomez-Inclan. Basic Biomedical Research Baccalaureate Program, UNAM.

Under my direct and comprehensive tutoring, Cecilia successfully developed an independent research project related to my Ph.D. thesis during her junior year. This project was very fruitful, and our results were published in a peerreview journal manuscript and presented in two international conferences. <u>Cecilia was awarded a "Best Session</u> <u>Poster Award" at the 22nd ISCOMS, Netherlands for the quality of our research work and her outstanding</u> <u>presentation skills.</u>

# STUDENT COMMITTEE MEMBER

2020 Bonnie Ebendick-Corpus. Doctoral program in Bomedical Sciences. WMU

### FEATURED COVER PUBLICATIONS AND POPULAR SCIENCE ARTICLES

- Calvo-Ochoa E., Christine Byrd-Jacobs, C. A. "The olfactory system of zebrafish as a model for the study of neurotoxicity and injury: implications for neuroplasticity and disease". *International Journal of Molecular Sciences*. 2019, 20(7), 1639
- 2. Calvo-Ochoa E., Arias, C. "Food for thought: what happens to our brain when we eat foods high in fat and sugar ?" *Frontiers for Young Minds*. 2019
- **3.** "Image of the Day: Zebrafish Olfactory Epithelium" Microscopy images featured in The Scientist magazine. https://www.the-scientist.com/image-of-the-day/image-of-the-day--zebrafish-olfactory-epithelium-66663

#### **CONFERENCE TALKS**

- 1. Calvo-Ochoa, E., Hernández-Ortega, K., Ferrera, P., Morimoto, S., Gutiérrez-Juárez R., Arias, C. "Short-term highfat and high-fructose diet feeding produces hippocampal insulin signaling alterations, dendrite and spine loss and neuroinflammation in the rat" *Society for Neuroscience Annual Meeting*, San Diego, CA, USA, November 2013.
- 2. Calvo-Ochoa E., Hernández-Ortega, K., Gutiérrez-Juárez, R., Arias C. "Short-term high-fat diet feeding produces hippocampal insulin signaling alterations associated with tau phosphorylation and astrocytic activation" Society for Neuroscience Annual Meeting, New Orleans, LA, USA, October 2012.

#### **CONFERENCE PRESENTATIONS**

1. Calvo-Ochoa, E., Miyasaka, N., Yoshihara, Y., Byrd-Jacobs., C. " Zebrafish olfactory system degeneration and regeneration following a focal lesion of the olfactory bulb" *Zebrafish Neural Circuits and Behavior meeting*, Cold Spring Harbor Laboratory, NY, USA, November 2019.

- 2. Calvo-Ochoa, E., Byrd-Jacobs., C. " The olfactory bulb of zebrafish regenerates and recovers by 21 days after an excitotoxic focal lesion" Society for Neuroscience Annual Meeting, Chicago, IL, USA, October 2019.
- **3. Calvo-Ochoa, E.,** Byrd-Jacobs., C. "Recovery and morphological remodeling of the zebrafish olfactory bulb following a focal excitotoxic lesion" *LXI Association for Chemosensory Sciences Meeting,* Bonita Springs, Florida. April 2019.
- 4. Gómez-Inclán, C., Calvo-Ochoa, E., Ferrera, P., Arias, C. "Neuronal model of insulin resistance induced by palmitic acid". 22<sup>nd</sup> International Student Congress of (bio)Medical Sciences, Netherlands. June 2015.
- 5. Calvo-Ochoa, E., Gómez-Inclán, C. Ferrera, P., Quiroz-Báez, R., Arias, C. "Saturated fatty acids promote insulin signaling alterations and mitochondrial dysfunction in the rat hippocampus and in vitro". 46<sup>th</sup> Annual Meeting of the American Society for Neurochemistry, Atlanta, Georgia. March 2015.
- 6. Calvo-Ochoa, E., Hernández-Ortega, K., Ferrera, P., Quiroz-Báez, R., Clorinda Arias, C. "Short-term high-fat-and-fructose feeding produces hippocampal insulin resistance, dendrite and spine reduction, tau and MAP-2 alterations, synaptic mitochondrial dysfunction and neuroinflammation". XXX Congreso Nacional de Bioquímica, Guadalajara, Mexico. November 2014.
- 7. Calvo-Ochoa, E., Hernández-Ortega, K., Ferrera, P., Quiroz-Báez, R., Clorinda Arias, C. "Obesidad y resistencia a la insulina por dietas altas en grasa y fructosa producen alteraciones estructurales, disfunción mitocondrial, neuroinflamación y resistencia a la insulina en el hipocampo". *LIBB's 40<sup>th</sup> anniversary meeting*, Mexico. October 2014.
- 8. Calvo-Ochoa, E., Hernández-Ortega, K., Ferrera, P., Quiroz-Báez, R., Arias, C. "Short-term high-fat-and-fructose feeding produces hippocampal insulin resistance, dendrite and spine reduction, tau and MAP-2 alterations, synaptic mitochondrial dysfunction and neuroinflammation". *Federation of European Neuroscience Societies Forum*, Milan, Italy. July 2014.
- 9. Calvo-Ochoa, E., Hernández-Ortega, K., Ferrera, P., Morimoto, S., Gutiérrez-Juárez R., Arias, C. "Short-term high-fat and high-fructose diet feeding produces hippocampal insulin signaling alterations, dendrite and spine loss and neuroinflammation in the rat". Society for Neuroscience Annual Meeting, San Diego, CA. November 2013.
- 10. Calvo-Ochoa, E., Hernández-Ortega, K., Ferrera, P., Morimoto, S., Gutiérrez-Juárez R., Arias, C. "La resistencia a la insulina y obesidad producidas por dietas altas en grasa (HFD) provocan alteraciones en la señalización de insulina, pérdida sináptica y neuroinflamación en el hipocampo. ¿Papel de mTOR?". XVIII Congreso Nacional de Cárteles Dr. Lino Díaz de León, Mexico. October 2013.
- 11. Calvo-Ochoa E., Hernández-Ortega, K., Gutiérrez-Juárez, R., Arias C. "Short-term high-fat diet feeding produces hippocampal insulin signaling alterations associated with tau phosphorylation and astrocytic activation". Society for Neuroscience Annual Meeting, New Orleans, LA. October 2012.
- Savariego, D., Calvo, E., Cvejic, S. Jordan, B. "Prr7 en route from the synapse to the nucleus", *Dominick Purpura Neuroscience Department Retreat*, Albert Einstein College of Medicine, Chappaqua, NY. May 2009.
- 13. Flores, T., Calvo, E., Kachan, D., Ma'ayan, A., Diverse-Pierluissi, M., "G-protein Mediated Regulation of Synaptyc Cell Adhesion and Modular PDZ-Scaffolding/Cav2.2 Channel Complexes", *Pharmacology and Systems Biology Retreat*, Mount Sinai School of Medicine, New York City, NY. December 2008.
- 14. Romero-Ávila, T., Calvo-Ochoa, E., Rodríguez-Pérez, E., Kalashnikova, E., Reyes-Cruz, G., García-Sáinz, J., "Los receptores para: IGF-I, Insulina, EGF y PDGF inducen cross-talk sobre los receptores α1D adrenérgicos. Fosforilación/Desensibilización". XXVII Congreso de Bioquímica, Mexico. November 2008.
- **15. Calvo-Ochoa, E.**, Romero-Ávila, T., Rodríguez-Pérez, E., García-Sáinz, J., "Desensibilización y fosforilación de los receptores α1D adrenérgicos por receptores con actividad de tirosina cinasa". *XII Congreso Nacional de Cárteles Dr. Lino Díaz de León*, Mexico. October 2007.
- **16. Calvo-Ochoa, E.**, Romero-Ávila, T., Rodríguez-Pérez, E., García-Sáinz, J., "Desensibilización de los receptores α1D adrenérgicos a través de los receptores para EGF y PDGF". *1er. Congreso Nacional de Transducción de Señales*, Boca del Río, Veracruz, Mexico. September 2007.

# OUTREACH AND ACTIVITIES TO PROMOTE DIVERSITY IN STEM

# Mentoring

**2019 MaryJose Cisneros Garza.** U.S. – Mexico Leaders Network. Women in STEM, Future Leaders is a mentoring program, in STEM designed for young women in public high schools in Mexico. With this program we want to empower them and give them a close look to the world of science, expecting to wake in them the urge to continue their professional studies in these areas.

2018 Carlos Cervantes and James Gore. 7th grade, High Tech Middle, Chula Vista, CA.

I met Carlos and James through a "Skype a Scientist" session with their classroom. I am their scientific advisor for an independent research project on "diet and memory" that they present at the end of the academic year.

#### Panelist and reviewer

2020	Cientifico Latino. Scholarship reviewer and mentor
2020	Hispanic Association of Colleges and Universities (HACU). Scholarship reviewer
2019	Western Michigan University. Ad hoc task force of the Office for diversity and inclusion

# Talks and workshops

- **1.** "Getting To and Getting Through" discussion panel. *Invited panelist by the Latino Student Alliance*, Western Michigan University, October 2019.
- Brain dissection laboratory with Ms. Moore's middle school class. Kalamazoo Country Day School, Portage, MI, March 2019
- "Skype a Scientist" session with Ms. Herrera's kindergartners. Isaac E. Imes Elementary in Glendale, AZ, November 2018
- **4.** "Exploring the brain through science" *Invited science Workshop to CAMP students.* Western Michigan University, November 2018.
- "Skype a Scientist" session with Mr. Clarke's 7th graders. High Tech High Middle School, Chula Vista, CA, October 2018
- **6.** "Questions you wanted to ask about the brain but never could. Ask a neuroscientist!" *Invited science Workshop to CAMP students*. Western Michigan University, October 2018.
- **7.** "A journey through memory and food y un poquito de ciencia" *Invited informational talk to CAMP students*. Western Michigan University, April 2018.
- 8. "Overcoming overwhelm in college: the neuroscience behind anxiety" *Invited informational presentation of the Delta Tau Lambda Sorority, Inc. XI Chapter.* Western Michigan University, November 2017.

# LEADERSHIP AND SERVICE

2020	Hope College
	Neuroscience Program social media coordinator
2019	Western Michigan University
	Ad hoc task force of the Office for diversity and inclusion
	Panelist for the Graduate College Professional Development Workshop
	Panelist for the Graduate College Professional Development Workshop
	Panelist for Latino Student Alliance Workshop
2018	Medallion Scholarship Observer
2019 – present	El Concilio. Non-profit organization in Kalamazoo, MI
	Board of Directors member
	Fundraising committee member
	COVID-19 relief funds "Mi Gente" committee member
2015-2017	Volunteer

2020	Cientifico Latino. Scholarship reviewer and mentor
2020	Hispanic Association of Colleges and Universities (HACU). Scholarship reviewer
2019 – 2020	Association for Chemoreception Sciences. Social media committee member
2019 – 2020	U.S. – Mexico Leaders Network, Women in STEM, future leaders. Mentor
2017– present	Latinas in STEM. Professional Member
2014	Organizing committee of the 40th Anniversary of the Basic Biomedical Research
	Baccalaureate program. Co-chair. School of Medicine, UNAM, Mexico
2011	Organizing committee of the XVII poster meeting "Lino Díaz de León". Committee
	member. Instituto de Investigaciones Biomedicas, UNAM, Mexico

#### SCIENTIFIC AND PROFESSIONAL MEMBERSHIPS

2020 – present	Faculty for Undergraduate Neuroscience (FUN)
2020 – present	Hispanic Association of Colleges and Universities (HACU)
2018 – present	Society for Neuroscience
2018 – present	Association for Chemoreception Sciences
2011 – 2015	Society for Neuroscience

#### AD HOC REVIEWER

- · Genes, brain and behavior
- Aquaculture
- Neural Plasticity
- Frontiers in Physiology

#### **MEDIA COVERAGE**

- 1. "Image of the Day: Zebrafish Olfactory Epithelium" Microscopy images featured in The Scientist magazine
- 2. https://www.the-scientist.com/image-of-the-day/image-of-the-day--zebrafish-olfactory-epithelium-66663
- 3. Newschannel 3 interview about the importance of having diverse women in science.
- 4. https://wwmt.com/news/local/wmu-receives-grant-from-national-science-foundation-to-promote-diversity-in-stem-fields
- "To discover and inspire: NSF fellowship recognizes biologist's brain cell regeneration research and skill at encouraging learners". Western Michigan University. http://wmich.edu/news/2018/12/50050
- 6. "Biologist earns WMU's first NSF postdoctoral research fellowship". W Magazine Research Edition. p.7,14. https://issuu.com/wmich/docs/w-magazine-research-edition-2018
- "Dr. Erika Calvo-Ochoa awarded National Science Foundation Postdoctoral Research Fellowship in Biology". WMU Research News. https://wmich.edu/research/calvo-ochoa-2018
- 8. "How sugar and fat rich diets harm your brain". Business Daily. https://www.businessdailyafrica.com/How-sugar-fatrich-diets-harm-your-brain/539444-3840988-13woexcz/index.html
- **9.** "Beyond the waistline: the impact of sugar and fat on your brain". World Economic Forum. https://www.weforum.org/agenda/2017/03/this-is-the-impact-of-sugar-and-fat-on-your-brain
- **10.** "How diets high in sugar and saturated fat could be harming your brain". The conversation. *http://theconversation.com/how-diets-high-in-sugar-and-saturated-fat-could-be-harming-your-brain-73657*
- 11. "Alto consumo de grasa y azúcar perjudica memoria y cognición". Investigación y Desarrollo. ("High-fat and sugar intake impairs memory and cognition"). http://invdes.com.mx/salud-mobil/5905-alto-consumo-de-grasa-y-azucar-perjudica-memoria-y-cognicion
- **12.** "40 aniversario de la Licenciatura en investigación Biomédica Básica" Edición Especial, Gaceta Biomédicas. (40th Anniversary of the Basic Biomedical Research program of UNAM, special issue). http://www.biomedicas.unam.mx/gaceta/2014/noviembre/index.html

- **13.** "Alto consumo de grasa y azúcar perjudica memoria y cognición". La Jornada newspaper. Featured in the cover. ("High-fat and sugar intake impairs memory and cognition") *http://www.jornada.unam.mx/2014/05/19/sociedad/032n1soc*
- 14. "El exceso de grasas y azúcares afectan la comunicación de nuestras neuronas". Educación contracorriente. (Fat and sugar excess affect communication between our neurons") http://www.educacioncontracorriente.org/secciones/neurocultura/25500-el-exceso-de-grasas-y-azucares-afectanla-comunicacion-de-nuestras-neuronas
- 15. "La dieta alta en grasa y azúcar afecta al desempeño cerebral". AZ Revista de Educación y Cultura. (A high-fat and sugar diet affects brain performance) http://www.elcomercio.com/tendencias/salud/dieta-alta-grasa-y-azucar.html
- 16. "Mala alimentación altera regiones cerebrales". El Universal newspaper. (Bad eating habits alter certain cerebral regions) http://archivo.eluniversal.com.mx/ciencia/2014/mala-alimentacion-altera-regiones-cerebrales-86569.html
- **17.** "Comer, amar, huir...todo con el cerebro". Gaceta Biomédicas p. 7, 8. (Eat, love, and run, using your brain) http://www.biomedicas.unam.mx/gaceta/2014/abril/index.html
- **18.** "El cerebro sufre las consecuencias de la mala alimentación: UNAM". Regeneración. (The brain suffers the consequences of bad eating habits").

   http://ciencia.unam.mx/leer/326/El\_cerebro\_sufre\_las\_consecuencias\_de\_una\_mala\_dieta

Updated: December 2020