

Cindy Voisine, PhD

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EDUCATION AND RESEARCH

Northeastern Illinois University, Department of Biology, Chicago, IL

- Associate Professor of Biology, 2012-current

Northwestern University, Department of Molecular Biosciences, Evanston, IL

- Postdoctoral researcher with Richard I. Morimoto, 2005 - 2012

Harvard Medical School, Department of Pathology and Massachusetts General Hospital Cancer Center, Boston, MA

- Postdoctoral researcher with Anne C. Hart, 2000 – 2004

University of Wisconsin, Department of Biomolecular Chemistry, Madison, WI

- Ph.D. researcher with Elizabeth A. Craig, 1993 – 1999

Mycogen Corporation, Analytical Chemistry Group, San Diego, CA

- Research technician, 1990 – 1993

Bates College, Lewiston, ME

- B. S. in Biology, 1989

PUBLICATIONS

Brehme M, Sverchkova A, and Voisine C. (2019) “Proteostasis Network Deregulation Signatures as Biomarkers as for Pharmacological Disease Intervention”. *Current Opinions in Systems Biology*, Volume 15, June 2019, Pages 74-81.

Sandhof CA, Hoppe SO, Druffel-Ausustin S, Gallrein C, Kirstein J, Voisine C, and Nussbaum-Krammer C. (2019) “Reducing INS-IGF1 signaling protects against non-cell autonomous vesicle rupture caused by SNCA spreading.” *Autophagy*. Jul 29:1-22.

Voisine C and Brehme M. (2019) “HSP90 et al.: Chaperome and Proteostasis Deregulation in Human Disease”. Heat Shock Protein 90 in Human Diseases and Disorders. Series Editors: Alexzander A.A. Asea and Stuart Calderwood, *Springer Press*.

Richards Z*, McCray T*, Marsili J, Zenner ML, Manlucu JT, Garcia J, Murray M., Voisine C, Murphy AB, Abdulkadir SA, Prins GS, Nonn L. (2019) “Prostate Stroma Increases the Viability and Maintains the Branching Phenotype of Human Prostate Organoids.” *iScience*. 12:304-317.

PUBLICATIONS CONTINUED

Brehme M and Voisine C. (2016) “Model Systems of protein-misfolding diseases reveals chaperone modifiers of proteotoxicity” *Disease Models & Mechanisms*. Aug 1:9(8):823-38.

Neto MF, Nguyen QH, Marsili J, McFall SM, and Voisine C. (2016) “The nematode *Caenorhabditis elegans* displays a chemotaxis behavior to tuberculosis-specific odorants” *Journal of Clinical Tuberculosis and Other Mycobacterial Diseases*. Volume 4, August, Pages 44–49.

Brehme M*, Voisine C*, Rolland T, Wachi S, Soper J, Malhotra J, Zhu J, Orton K, Vilella A, Garza D, Reinhart PH, Vidal M, Ge H, and Morimoto, RI. (2014) “A Chaperone Subnetwork Safeguards Proteostasis in Aging and Neurodegenerative Diseases” *Cell Reports*. Nov 6;9(3):1135-50.

Zhang Y, Benmohamed R, Huang H, Chen T, Voisine C., Morimoto RI, Kirsch D, and Silverman RB. (2013) Arylazanyl pyrazolone derivatives as inhibitors of mutant SOD1-dependent protein aggregation for the treatment of amyotrophic lateral sclerosis. *Journal of Medicinal Chemistry* 56(6):2665-75.

Voisine C., Pedersen JS, and Morimoto, RI. (2010) Chaperone Networks: Tipping the Balance in Protein Folding Diseases. *Neurobiol Dis*. 40(1): 12-20.

Jeong H*, Then F*, Melia TJ, Mazzulli JR, Libin C, Savas JN, Voisine C., Paganetti P, Tanese N, Hart AC, Yamamoto A, and Krainc D. (2009) Acetylation Targets Mutant Huntingtin to Autophagosomes for Degradation. *Cell* 137: 60-72.

Voisine C., Orton K, and Morimoto RI. (2007) Protein Misfolding, Chaperone Networks, and the Heat Shock Response in the Nervous System. *Molecular Neurology* Elsevier, Academic Press.

Varma H, Cheng R, Voisine C., Hart AC and Stockwell BR. (2007) Small Molecule Inhibitors Of Metabolism Rescue Cell Death in Huntington’s Disease Models. *Proc. Natl. Acad. Sci. (USA)* 104: 14525-14530.

Voisine C*, Varma H*, Walker N*, Bates EA, Stockwell BR and Hart AC. (2007) Identification of Potential Therapeutic Drugs for Huntington's Disease using *Caenorhabditis elegans*. *PLoS ONE* 2(6): e504.

Varma H, Voisine C., De Marco CT, Cattaneo E, Lo DC, Hart AC, and Stockwell BR. (2007) Selective inhibitors of death in mutant huntingtin cells. *Nature Chemical Biology* 3(2): 99-100.

Voisine C. and Hart AC. (2004) *C. elegans* as a model system for triplet repeat diseases. *Methods in Molecular Biology* Humana Press 277: 141-160.

Faber PW*, Voisine C*, King DC, Bates E, and Hart AC. (2002) Glutamine/proline-rich PQE-1 proteins protect *Caenorhabditis elegans* neurons from huntingtin polyglutamine neurotoxicity. *Proc. Natl. Acad. Sci. (USA)* 99: 17131-17136.

PUBLICATIONS CONTINUED

Voisine C, Cheng YC, Ohlson M, Schilke B, Hoff K, Beinert H, Marszalek J, and Craig EA. (2001) Jac1, a mitochondrial J-type chaperone, is involved in the biogenesis of Fe/S clusters in *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci. (USA)* 98: 1483-1488.

Voisine C, Schilke B, Ohlson M, Beinert H, Marszalek J, and Craig EA. (2000) Role of the mitochondrial Hsp70s, Ssc1 and Ssq1, in the maturation of Yfh1. *Molecular and Cellular Biology* 20: 3677-3684.

Voisine C, Craig EA, Zufall N, von Ahsen O, Pfanner N, and Voos W. (1999) The protein import motor of mitochondria: unfolding and trapping of preproteins are distinct and separable functions of matrix Hsp70. *Cell* 97: 565-574.

Craig E, Voisine C, and Schilke B. (1999) Mitochondrial Iron Metabolism in the Yeast *Saccharomyces cerevisiae*. *Biological Chemistry* 380: 1167-1173.

Schilke B, Voisine C, Beinert H, and Craig EA. (1999) Evidence for a conserved system for iron metabolism in the mitochondria of *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci. (USA)* 96: 10206-10211.

Davis J, Voisine C, and Craig EA. (1999) Intragenic suppressors of Hsp70 mutants: interplay between the ATPase and peptide binding domains. *Proc. Natl. Acad. Sci. (USA)* 96: 9269-9276.

*Authors contributed equivalently to the publication

SELECTED PRESENTATIONS

School of Biological Sciences Spring Seminar Series, Molecular chaperones in *C. elegans* aging and neurodegenerative disease, Illinois State University, Normal, IL, February 2019

22nd Midwest Stress Response and Chaperone Conference, Cell to cell spreading of TDP-43 may be linked to toxicity in *Caenorhabditis elegans*, Northwestern University, Evanston, IL, January 2017

The Franco-German symposium on Age & Aging, A chaperome subnetwork safeguards proteostasis in aging and neurodegenerative disease, University of Montpellier, Montpellier, France, October 2016

6th Annual NEIU Faculty Research & Creative Activities Symposium, Amyotrophic lateral sclerosis in *C. elegans*: Understanding how TDP-43 aggregation affects neuron function, Chicago, IL, November 2015

55th American Society for Cell Biology Meeting, Proteostasis imbalances impact sensory and motor neuron function in *C. elegans* animals expressing TDP-43, San Diego, CA, December 2015

SELECTED PRESENTATIONS CONTINUED

45th Society for Neuroscience Meeting, Proteostasis imbalances impact sensory and motor neuron function in *C. elegans* animals expressing TDP-43, Chicago, IL, October 2015

20th International *C. elegans* Meeting, Proteostasis imbalances impact sensory and motor neuron function in *C. elegans* animals expressing TDP-43, Los Angeles, CA, June 2015

3rd Annual Michigan *C. elegans* Meeting, Proteostasis imbalances impact sensory and motor neuron function in *C. elegans* animals expressing TDP-43, Grand Rapids, MI March 2015

5th Annual NEIU Faculty Research & Creative Activities Symposium, Amyotrophic lateral sclerosis in *C. elegans*: Understanding how TDP-43 aggregation affects neuron function, Chicago, IL, November 2014

4th Annual NEIU Faculty Research & Creative Activities Symposium, Using worms to model human neurodegenerative diseases, Chicago, IL, November 2013

3rd Annual NEIU Faculty Research & Creative Activities Symposium, The Chaperome as a Therapeutic Space in Aging and Neurodegenerative Diseases, Chicago, IL, November 2012

52nd American Society for Cell Biology Meeting, The Chaperome as a Therapeutic Space in Aging and Neurodegenerative Diseases, San Francisco, CA, December 2012

SELECTED STUDENT PRESENTATIONS

27th Annual NEIU Student Research & Creative Activities Symposium, Victoria Puccini de Castro presents “A Genetic Screen to Identify New FGFR Signaling Components in *C. elegans*” Chicago, IL, April 2019

Chicago Society For Neuroscience Annual Meeting: Phoenix Toboz presents “Cell to cell spreading of TDP-43 fragments may lead to toxicity in *C. elegans*”, Chicago IL, April 2019

Illinois Louis Stokes Alliance for Minority Participation Conference: Rocio Avila presents “Mapping the movement of the Amyotrophic Lateral Sclerosis associated protein TDP-43 from cell to cell using *C. elegans*” Lille, IL, February 2019

24th Midwest Stress Response and Chaperone Conference: Phoenix Toboz presents “Cell to cell spreading of TDP-43 fragments may lead to toxicity in *C. elegans*”, Chicago IL, January 2019

Society for Advancement of Chicanos and Native Americans in Science National Conference: Yuriy Khlopas presents “Cytoplasmic aggregates of human TDP-25 protein in *C. elegans* challenges proteostasis” San Antonio, TX, October 2018

SELECTED STUDENT PRESENTATIONS CONTINUED

Society for Advancement of Chicanos and Native Americans in Science National Conference: Jazmine Jan presents “Developing a model to screen for small molecule treatments that reduce advanced glycation end products using *C. elegans*” San Antonio, TX, October 2018

Aging, Metabolism, Pathogenesis, Stress and Small RNAs *C. elegans* Meeting: Phoenix Toboz presents “Cell to cell spreading of TDP-43 fragments may lead to toxicity in *C. elegans*”, Madison, WI, June 2018

Midwest Society for Advancement of Chicanos and Native Americans in Science National Conference: Diana Maldonado presents “Using neuronal hypersensitivity in *C. elegans* to identify small molecules inhibitors of advanced glycation end products” Chicago, IL April 2018

Illinois Louis Stokes Alliance for Minority Participation Conference: Jacob Manulucu presents “Building a Prostate in a Dish: A Patient-Derived Model of Prostate Cancer” Lille, IL February 2018

Annual Biomedical Research Conference for Minority Students: Chido Chikuturudzi presents “Using neuronal hypersensitivity in *C. elegans* to identify small molecules inhibitors of advanced glycation end products”, Phoenix, AZ, November 2018

Annual Biomedical Research Conference for Minority Students: Omar Parra-Payan presents “Probing the molecular mechanism of receptor tyrosine kinase enzymatic activation through the analysis of heterodimers of the *C. elegans* FGF Receptor, EGL-15”, Phoenix, AZ, November 2018

Society for Advancement of Chicanos and Native Americans in Science National Conference: Jean Pierre Raymond presents “Expression of the prion-like protein TDP-43 in *C. elegans* muscles and neurons reduces fecundity and successful embryogenesis” Salt Lake City, UT October 2017

22nd International *C. elegans* Meeting: Joseph Marsili presents “The nematode *Caenorhabditis elegans* displays a chemotaxis behavior to tuberculosis-specific odorants.” Los Angeles, CA, June 2017

5th Annual Michigan *C. elegans* Meeting, Sumayh Aldakeel presents “Detection of Volatile Compounds Secreted By *Mycobacterium tuberculosis* Using *Caenorhabditis elegans*” Grand Rapids, MI, April 2017

Annual Biomedical Research Conference for Minority Students: Kirsten Knapton presents “Primary prostate cancer tissues are heterogeneous for accumulation of the advanced glycation end product N(E)-carboxymethyl lysine”, Tampa, Florida, November 2016

Society for Advancement of Chicanos and Native Americans in Science National Conference: Jessica Silvestri presents “Using Small Molecule Therapy to Reduce AGEs in *C. elegans* for Prostate Cancer Treatment” Long Beach, CA, October 2016

SELECTED STUDENT PRESENTATIONS CONTINUED

4th Annual Michigan *C. elegans* Meeting: Jason Garcia presents “Using *C. elegans* as a model for Amyotrophic Lateral Sclerosis to study the relationship between TDP-43 aggregation and neuronal dysfunction” Grand Rapids, MI, April 2016

21st Midwest Stress Response and Chaperone Conference: Da In Lee presents her work entitled “Understanding the relationship between aggregation-prone proteins and neurotoxicity by assessing sensory neuronal function in *C. elegans*”, Chicago IL, January 2016

55th American Society for Cell Biology Meeting: Da In Lee presents “Understanding the relationship between aggregation-prone proteins and neurotoxicity by assessing sensory neuronal function in *C. elegans*”, San Diego, CA, December 2015

20th International *C. elegans* Meeting: Zelene Figueroa presents “*C. elegans* Model of Amyotrophic lateral sclerosis: Understanding the Role of TDP-43 Expression on HSN Motor Neuron Function”, Los Angeles, CA, June 2015

3rd Annual Michigan *C. elegans* Meeting: Emily Rendleman presents “Amyotrophic lateral sclerosis in *C. elegans*: THE Effects of TDP-43 Expression on Neuronal Health” Grand Rapids, MI, April 2015

Chicago Society For Neuroscience Annual Meeting: DeElegant Robinson presents “Understanding the Role of TPR-1 Function in Cellular Protection in *C. elegans*” Chicago IL, March, 2015

Chicago Society For Neuroscience Annual Meeting: Quan Nguyen presents “Modeling Amyotrophic Lateral Sclerosis in *C. elegans*: Evaluating how TDP-43 expression impacts sensory neuron function” Chicago IL, March 2015

20th Midwest Stress Response and Chaperone Conference: Quan Nguyen presents “Modeling Amyotrophic lateral sclerosis in *C. elegans*: Evaluating how TDP-43 expression impacts sensory neuron function” Chicago IL, January 2015

Society for Advancement of Chicanos and Native Americans in Science National Conference: Zelene Figueroa presents “Understanding the impact of TDP-43 expression on Organismal Health”, Los Angeles, CA, October 2014

Aging, Metabolism, Pathogenesis, Stress and Small RNAs *C. elegans* Meeting: DeElegant Robinson presents “Understanding the Role of TPR-1 Function in Cellular Protection in *C. elegans*”, Madison, WI, July 2014

Society for Advancement of Chicanos and Native Americans in Science National Conference: Emily Rendleman presents “Amyotrophic lateral sclerosis in *C. elegans*: Understanding How TDP-43 Aggregation Affects Motor Neuron Function” San Antonio, TX, October 2013

AWARDS AND GRANTS

Fulbright Specialist Award to University of Heidelberg, 2019

Erasmus+ KA107 Scholarship recipient to University of Warsaw, Warsaw, Poland, May 2019

Tenure and Promotion to Associate Professor of Biology Northeastern Illinois University, 2018

NIH/U54 Chicago CHEC Award “Prostate Cancer Disparity in Chicago-Area African American Men: Patient-derived Models and Biomarkers of Cancer Risk” (Co-PI with Dr. Larisa Nonn from UIC, Dr. Sarki Abdulkadir and Dr. Adam Murphy from Northwestern University, and Marcus Murray from Project Brotherhood), 2016-2018

NIH/R15 “Signaling Specificity Mediated by the *C. elegans* FGF Receptor Tyrosine Kinase” (Co-Investigator with Dr. Michael Stern from NEIU and Te-Wen Lo from Ithaca College), 2016-2019

US Scholar Award, Fulbright Association, 2016

Summer Research Stipend Award, Northeastern Illinois University, 2016

Student Center for Science Engagement Undergraduate Summer Research Award, Northeastern Illinois University, 2013, 2014, 2015, 2017, 2018 & 2019

Excellence Award in Teaching, Northeastern Illinois University, 2017-2018

Excellence Award in Research, Northeastern Illinois University, 2015-2016

Excellence Award in Teaching, Northeastern Illinois University, 2014-2015

Committee on Organized Research Grant Award, Northeastern Illinois University, 2013 & 2015

Abstract selected for American Society for Cell Biology Press Book (Top Pick), 2012