

# John Didion | PhD

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## Education

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- 2008.08 to 2014.05 **Doctor of Philosophy, Bioinformatics and Computational Biology**  
*University of North Carolina, Chapel Hill, NC*
- 1996.09 to 2001.06 **Bachelor of Science, Computer Science**  
*Northwestern University, Evanston, IL*

## Research Experience

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- 2014.09 to Present **National Human Genome Research Institute** Bethesda, MD  
*Postdoctoral Fellow, Laboratory of Dr. Francis S Collins*  
Investigating the role of epigenetics in common complex disease, especially type 2 diabetes.
- 2009.05 to 2014.08 **University of North Carolina at Chapel Hill** Chapel Hill, NC  
*Research Assistant, Laboratory of Dr. Fernando Pardo-Manuel de Villena*  
Characterized the genetic determinants of two meiotic drive systems in the mouse. First, conducted a GWAS of wild mice to identify genes associated with the accumulation of Robertsonian translocations. Second, mapped a novel meiotic drive locus, R2d2, and multiple modifier loci responsible for extreme TRD in the Collaborative Cross. Also developed CLASP, a software tool for validation of cell lines used in research.
- 2007.08 to 2008.08 **Institute for Systems Biology** Seattle, WA  
*Computational Biology Software Engineer, Laboratory of Dr. Ruedi Aebersold*  
Developed informatics software to support proteomics research. Created TIQAM, a work flow management system for MRM (Multiple Reaction Monitoring) experiments.

## Industry Experience

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- 2004.09 to 2007.08 **Muze, Inc.** Seattle, WA  
*Software Development Engineer*
- 2003.09 to 2004.09 **Encyclopaedia Britannica, Online Services** Chicago, IL  
*Software Developer*
- 2001.05 to 2003.08 **ThoughtWorks, LLC** Chicago, IL  
*Software Developer/Consultant*

## Teaching Experience

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- 2013.09 to 2014.05    **University of North Carolina at Chapel Hill**  
*Undergraduate senior research project, Mentor*
- 2013.09 to 2013.12    **University of North Carolina at Chapel Hill**  
*Genetic Analysis 2, Teaching Assistant*

## Publications

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### Journal Articles.....

- [12] Chandler RL, Damrauer JS, Raab JR, Schisler JC, Wilkerson MD, **Didion JP**, et al. "Coexistent ARID1A-PIK3CA mutations promote ovarian clear-cell tumorigenesis through pro-tumorigenic inflammatory cytokine signaling," *Nature Communications*, vol. 6, p. 6118, 2015. DOI: 10.1038/ncomms7118.
- [11] Crowley JJ, ...13 others..., **Didion JP**, et al. "Analyses of allele-specific gene expression in highly divergent mouse crosses identifies pervasive allelic imbalance," *Nature Genetics*, online, 2015. DOI: 10.1038/ng.3222.
- [10] **Didion JP**, Morgan AP, Clayshulte AMF, et al. "A Multi-Megabase Copy Number Gain Causes Maternal Transmission Ratio Distortion on Mouse Chromosome 2," *PLoS Genetics*, vol. 11, no. 2, e1004850, 2015. DOI: 10.1371/journal.pgen.1004850.
- [9] **Didion JP**, Buus RJ, Naghashfar Z, et al. "SNP array profiling of mouse cell lines identifies their strains of origin and reveals cross-contamination and widespread aneuploidy," *BMC Genomics*, vol. 15, p. 847, 2014. DOI: 10.1186/1471-2164-15-847.
- [8] **Didion JP** and Pardo-Manuel de Villena F, "Deconstructing *Mus gemischus*: advances in understanding ancestry, structure, and variation in the genome of the laboratory mouse," *Mammalian Genome*, vol. 24, no. 1-2, pp. 1-20, 2013. DOI: 10.1007/s00335-012-9441-z.
- [7] Calaway JD, Lenarcic AB, **Didion JP**, et al. "Genetic architecture of skewed X inactivation in the laboratory mouse," *PLoS Genetics*, vol. 9, no. 10, e1003853, 2013. DOI: 10.1371/journal.pgen.1003853.
- [6] Collaborative Cross Consortium, "The genome architecture of the Collaborative Cross mouse genetic reference population," *Genetics*, vol. 190, no. 2, pp. 389-401, 2012. DOI: 10.1534/genetics.111.132639.
- [5] **Didion JP**, Yang H, Sheppard K, et al. "Discovery of novel variants in genotyping arrays improves genotype retention and reduces ascertainment bias," *BMC Genomics*, vol. 13, p. 34, 2012. DOI: 10.1186/1471-2164-13-34.
- [4] Aylor DL, ...11 others..., **Didion JP**, et al. "Genetic analysis of complex traits in the emerging Collaborative Cross," *Genome Research*, vol. 21, no. 8, pp. 1213-1222, 2011. DOI: 10.1101/gr.111310.110.
- [3] Yang H, Wang JR, **Didion JP**, et al. "Subspecific origin and haplotype diversity in the laboratory mouse," *Nature Genetics*, vol. 43, no. 7, pp. 648-655, 2011. DOI: 10.1038/ng.847.
- [2] Eisener-Dorman AF, **Didion JP**, Santos C, Calaway JD, "The 23rd International Mammalian Genome Conference meeting report," *Mammalian Genome*, vol. 21, no. 5-6, pp. 217-223, 2010. DOI: 10.1007/s00335-010-9265-7.
- [1] Lange V, Malmstrom JA, **Didion JP**, et al. "Targeted quantitative analysis of *Streptococcus pyogenes* virulence factors by multiple reaction monitoring," *Molecular and Cellular Proteomics*, vol. 7, no. 8, pp. 1489-1500, 2008. DOI: 10.1074/mcp.M800032-MCP200.

## Oral Presentations

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2013.09	<b>27th Intl. Mammalian Genome Conference</b>	Salamanca, Spain
2013.05	<b>12th Annual Meeting of the Complex Traits Community</b>	Madison, WI
2012.09	<b>16th EBM Conference</b>	Marseille, France
2012.09	<b>UNC Genetics Department Retreat</b>	Myrtle Beach, SC
2010.10	<b>24th Intl. Mammalian Genome Conference</b>	Heraklion, Greece
2010.05	<b>9th Annual Meeting of the Complex Traits Community</b>	Chicago, IL
2009.09	<b>23rd Intl. Mammalian Genome Conference</b>	San Diego, CA

## Poster Presentations

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2014.10	<b>28th Intl. Mammalian Genome Conference</b>	Bar Harbor, ME
2011.09	<b>UNC Genetics Department Retreat</b>	Myrtle Beach, SC
2011.06	<b>Genetics Society of America Mouse Genetics</b>	Washington D.C.
2011.06	<b>National Centers for Systems Biology Annual Meeting</b>	Duke University
2010.09	<b>UNC Genetics Department Retreat</b>	Myrtle Beach, SC
2009.09	<b>UNC Genetics Department Retreat</b>	Asheville, NC

## Funding

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2014.12	<b>NIH Intramural Sequencing Center Pilot Grant</b> <i>Epigenomic regulation of glucose response in a human pancreatic islet Beta cell line</i> Institutional award with funding for sequencing services
2014.12 to 2015.04	<b>Department of Health and Human Services Ignite</b> <i>LabGenius to The Smart Lab Notebook for Scientists</i> Incubator program with USD 5,000 funding
2009.09 to 2010.08	<b>Bioinformatics and Computational Biology Training Grant</b> <i>NIH GM067553-04</i> Institution-awarded fellowship
2009.09	<b>International Mammalian Genome Society Fellowship</b> <i>Travel grant</i>

## Honors & Awards

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- 2014.12      **Dean's Distinguished Dissertation Award**  
*University of North Carolina at Chapel Hill*  
Nominee from the Bioinformatics and Computational Biology program
- 2013.09      **Verne Chapman Young Scientist Award**  
*International Mammalian Genome Society*  
Best talk at the International Mammalian Genome Conference
- 2013.05      **Chicago Prize**  
*Complex Traits Consortium*  
Best graduate student talk at the Complex Traits Consortium meeting
- 2010.10      **Genome Research Award for Outstanding Poster**  
*International Mammalian Genome Society*  
Outstanding poster at the International Mammalian Genome Conference

## Professional Memberships & Service

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- 2013.09 to 2015.09    **International Mammalian Genome Society**  
*Secretariat member (honorary)*
- 2013.08      **UNC Genetics Department Retreat**  
*Abstract Review Committee*