

## Uğur Uzay Sezen

Department of Ecology and Evolutionary Biology

Institute for Systems Genomics

University of Connecticut

75 North Eagleville Road

Storrs, CT 06269-3043 USA

Email: [uzay\\_sezen@yahoo.com](mailto:uzay_sezen@yahoo.com)

Web: <http://naturedocumentaries.org/>

<http://compgenomics.lab.uconn.edu>

<http://hydrodictyon.eeb.uconn.edu/people/sezen/>

### Education:

Post-doctoral research in Smithsonian Environmental Research Center, Edgewater, MD.  
(April 1<sup>st</sup> 2017 – Current) PIs: Dr. Sean McMahon, Dr. Nathan Swenson.

Transcriptome analysis of seasonal and yearly growth dynamics of temperate trees in SERC and Harvard Forest ForestGEO plots.

Reference transcriptome assembly, gene annotation and comparative transcriptomics of woody plants Luquillo Experimental Forest.

Reference genome assembly and annotation of *Acer negundo*, *Acer saccharum*, *Inga vera* and *Fagus americana*.

Post-doctoral research in Institute for Systems Genomics, University of Connecticut, Storrs  
(April 1<sup>st</sup> 2015 – March 15<sup>th</sup> 2017). PI: Dr. Jill L. Wegrzyn.

Transcriptome analysis of sugar pine along its latitudinal gradient.

Comparative analysis of transcriptomes of four white pine species.

Analysis of phenylpropanoid and terpenoid pathways in sugar pine genome V1.0

Douglas-fir draft genome: Comparative analysis of light harvesting complexes.

Post-doctoral research in Plant Genome Mapping Laboratory at University of Georgia, Athens  
(Oct 2008 – Feb 2015). PI: Dr. Andrew H. Paterson.

Micro-RNA expression in response to drought in sorghum seedlings.

Nucleolar dominance in tetraploid hybrid *Sorghum halepense*.

Population genetic analysis US populations of *Sorghum halepense*.

Ph.D. 24 August, 2007. Advisor: Dr. Robin L. Chazdon.

Ecology & Evolutionary Biology Department at University of Connecticut.

Dissertation title: Parentage analysis of a regenerating canopy palm population in a tropical second-growth forest.

M.S. in Biological Sciences, 1998. Advisor: Dr. Sertac Onde.

Middle East Technical University, Turkey.

Thesis title: *Agrobacterium*-mediated marker gene transfer to the pharmaceutical plant opium poppy (*Papaver somniferum*).

B.S. in Biological Sciences, 1995.

Middle East Technical University, Turkey.

Specialized in Plant Biology.

## Training:

- The Eukaryotic Genome Annotation Course, 2008, **J. Craig Venter Institute**, Rockville, MD.  
Instructor: Linda Hannick, JCVI.
- The Genome Access Course, 2008. **Cold Spring Harbor Laboratory**, NY. Dr. Benjamin King, Dr. Gareth Howell, Dr. Laura Reinholdt, Jackson Laboratories, Bar Harbor, ME.
- NECSI (New England Complex Systems Institute) Course, **MIT** 2007.  
Complex Physical, Biological and Social Systems, Dr. Yaneer Bar-Yam, Harvard.
- Organization for Tropical Studies (**OTS**) Course, Costa Rica, 2002.  
Molecular Genetic Methods in Tropical Ecology, Dr. H. Ballard, University of Ohio and Dr. J.L. Hamrick, University of Georgia.
- Department of Biological Sciences, Middle East Technical University, Ankara, Turkey.  
Population genetics/isozyme analysis and its application to genetic conservation in forest trees and crop species. Dr. Z. Kaya and Dr. W.T. Adams and funded by Turkish Ministry of Agriculture and Rural Affairs and The World Bank.

## Publications:

- Sezen U.U.**, Chazdon R.L. and Holsinger K.E. (2005) "Genetic consequences of tropical second-growth forest regeneration." **Science**, 307: p891.
- Sezen U.U.**, Chazdon R.L. and Holsinger K.E. (2007) "Multigenerational genetic analysis of tropical secondary regeneration in a canopy palm." **Ecology**, 88(12): p3065-3075.
- Robin L. Chazdon, Braulio V. Alvarado, Susan Letcher, Amanda Wendt, and **Uzay Sezen** (2008) Effects of human activities on successional pathways: Case studies from lowland wet forests of northeastern Costa Rica. In: *The Social Life of Forests*; Hecht S., Morrison K., and Padoch C., Editors; University of Chicago Press.
- Sezen U.U.**, Chazdon R.L. and Holsinger K.E. "Proximity is not a proxy for parentage in a Neotropical canopy palm." **Proc. R. Soc. B** (2009) 276: 2037-2044.
- Tang H., **Sezen U.U.**, Paterson A.H. "Domestication and plant genomes" **Current Opinion in Plant Biology** (2009) 13: 1-7.
- Tang H., Cuevas H.E., Das S., **Sezen U.U.**, Zhou C., Guo H., et al. "Seed shattering in wild sorghum is conferred by a locus unrelated to domestication" **PNAS** (2013): 1305213110v1-201305213.
- Atwater D., **Sezen U.U.**, Goff V., Kong W., Paterson A., Barney J. "Reconstructing changes in the genotype, phenotype, and climatic niche of an introduced species." **Ecography** (2015) 10.1111/ecog.02031
- Sezen U.U.**, Barney J.N., Atwater D.Z., Pederson G.A., Pedersen J.F., Chandler J.M., et al. "Multi-phase US spread and habitat switching of a post-Columbian invasive, *Sorghum halepense*." **PLoS One** (2016) 11(10): e0164584.
- Stevens K.A., Wegrzyn J.L., Zimin A., Puiu D., Crepeau M., Cardeno C., Paul R., Gonzalez D., Koriabine M., Holtz-Morris A.E., Martinez-García P.J., **Sezen U.U.**, et al. "Sequence of the sugar pine megagenome." **Genetics** (2016) 204: 1613-1626.
- Baker E.A.G., **Sezen U.U.**, Falk T., Maloney P., Vogler D., Jensen C., Mitton J., Wright J., et al. "Comparative transcriptomics among four white pine species." *G3: Genes, Genomes, Genetics* 8 (5) 1461-1474.

- Neale D.B., Wheeler N.C., McGuire P.E., Stevens K.A., Crepeau M., Cardeno C., Zimin A., Puiu D., Pertea G.M., Paul R., **Sezen U.U.**, Gonzalez D., Zaman S., et al. "A Reference Genome Sequence for Douglas-fir." *G3: Genes, Genomes, Genetics* 7 (9), 3157-3167.
- Kong W., Kim C., Zhang D., Guo H., Tan X., Jin H., Zhou C., Shuang L., Goff V., **Sezen U.**, Pierce G., Compton R., Lemke C., Robertson J., Rainville L., Auckland S., Paterson A. "Genotyping by sequencing of 393 *Sorghum bicolor* BTx623 x IS3620C recombinant inbred lines improves sensitivity and resolution of QTL detection." *G3: Genes, Genomes, Genetics* 8 (8), 2563-2572.
- Paterson A., Kong W., Johnston R., Nabukalu P., Wu G., Poehlman W., Goff V., Isaacs K., Lee T., Guo H., Zhang D., **Sezen U.U.**, Kennedy M., Bauer D., Feltus A., Wltzien E., Rattunde F., Barney J., Barry K., Cox S., Scanlon M. "Evolution of an invasive plant, *Sorghum halepense* L. ('Johnsongrass')" (in review).
- Paterson et al., Guo H.; Wang X.; Jiao Y.; Tuteja R.; Spillane C. ; Lee T.; Zhang D.; Kim C; **Sezen U.U.**; et al. "Gene duplication history shapes reservoirs of functional genetic diversity in cereal primary gene pools." (in review).
- Sezen U. U.**, Zaman S., Wegrzyn J.L. "Long intron genes and a gymnosperm-specific intrinsically disordered insertion in TFIIIFb." (in submission).
- Sezen U. U.** Worthy S.J, Umaña M.N., McMahon S., Davies S.J., Swenson N.G. "Comparative Transcriptomics of Tropical Woody Plants Reveals Convergent Expression Among Lianas." (in submission).

### **Presentations:**

- AGU Fall Meeting Dec 2018 Washington DC. "Multi-year and multi-season transcriptomic profiling of forest tree species from LTER sites for understanding latitudinal variation in growth performance."
- New York Botanical Garden's Mertz Library, Jan 2018. "A Journey in Genetics Genomics and Transcriptomics."
- Plant and Animal Genomes XXV Meeting San Diego, CA, Jan 2017. "A Reference draft genome sequence for Douglas-fir (*Pseudotsuga menziesii* (Mirb.) Franco)."
- Ecology & Evolutionary Biology departmental seminar series, UCONN, Storrs, CT, September 2016. "From crayons of population genetics to laser printers of genomics."
- Plant and Animal Genomes XXIV Meeting San Diego, CA, Jan 2016. "Comparative transcriptomics among four white pine species."
- Whitebark Pine Ecosystem Foundation Meeting, Ashland, OR, Sep 2015. "A comparative analysis of de novo assembled transcriptomes of four white pine species."
- Plant and Animal Genomes XXII Meeting San Diego, CA, Jan 2014. "Population genetic analysis of naturalized US populations of an invasive Post-Colombian invasive *Sorghum halepense*."
- Plant and Animal Genomes XXI Meeting San Diego, CA, Jan 2013. "A microRNA expression profile of drought-challenged *Sorghum* seedlings."
- Plant Biology Department seminar series. UGA, Athens, GA, Nov 2010. "A genetic analysis of recolonization by a tropical palm over three generations."
- Ecological Society of America, Memphis, TN, August 2006. "A multi-generational analysis of parentage and genetic diversity of a Neotropical canopy palm in second-growth forest."

Ecology & Evolutionary Biology departmental seminar series, UCONN, Storrs, CT, February 2006. "Parentage analysis of the canopy palm *Iriartea deltoidea* in a regenerating tropical second-growth forest."

Center for Latin American Studies Student Research Symposium, UCONN, Storrs, CT, April 2005. "Are you my mommy? Genetic background of a canopy palm in a young tropical second-growth rain forest in Costa Rica."

North East Ecology & Evolutionary Biology Conference, Storrs, CT, March 2004. "From extreme, reproductive dominance to balanced, local recruitment: Parentage analysis of the canopy palm *Iriartea deltoidea* in a tropical second-growth forest."

Botanical Society of America, Mobile, AL, July 2003. "Extreme reproductive dominance of the canopy palm *Iriartea deltoidea* regenerating in a second-growth lowland rain forest in Costa Rica."

### **Fellowships and Awards:**

Andrew Mellon Foundation Fellowship (2000)

World Wildlife Fund-Garden Club of America Fellowship in Ecological Restoration (2004)

Organization for Tropical Studies Fellowship (2004)

UCONN-EEB Graduate Studies Demi Award (2006)

Center for Conservation & Biodiversity – CT State Museum of Natural History BioBlitz Steering Committee Award (2016)

### **Professional Activities:**

Founder and editor of online video blog (since 2012): <http://naturedocumentaries.org>

Advisor for evolution timeline (since 2008): <http://www.johnkyrk.com/evolution.html>

Scientific advisor and contributor for Magma Magazine, Turkey (since 2015).

Scientific advisor and contributor for Atlas Magazine, Turkey (since 2005).

Reviewer for scientific journals including Biotropica, Silvae Genetica, Journal of Heredity, Ecology and Evolution, BMC Genomics, G3 Genes-Genomes-Genetics, New Phytologist, Ecology Letters.

Program committee member for NEEC 2004 (North East Ecology Conference).

BioBlitz Plant identification team. Connecticut Natural History Museum, 2001-2007.

Field assistant in Proyecto Bosques at La Selva Biological Field Station, Costa Rica (Principal Investigator: Dr. Robin L. Chazdon, University of Connecticut), 1999.

Researcher in *Agrobacterium*-mediated transformation and regeneration of *Papaver somniferum* L., 1995 – 1998.

### **Technical Expertise:**

Next-generation sequence analysis. Transcriptome assembly. Differential gene expression. RNA-Seq. Variation analysis. Comparative genome analysis and database search. RNA and Protein modeling and visualization. Nucleic acid extraction and PCR applications. DNA profiling (AFLP, microsatellite genotyping). Paternity and pedigree re-construction using molecular genetic marker data. Spatial genetic analysis. Bayesian population genetic analysis.

**References:**

**Jill L. Wegrzyn**

Department of Ecology and Evolutionary Biology  
Institute for Systems Genomics  
University of Connecticut  
75 North Eagleville Road  
Storrs, CT 06269-3043 USA  
860-486-8742  
[jill.wegrzyn@uconn.edu](mailto:jill.wegrzyn@uconn.edu)

**Sean McMahon**

Smithsonian Environmental Research Center  
647 Contees Wharf Road  
Edgewater, MD 21037-0028  
443-482-2262  
[mcmahons@si.edu](mailto:mcmahons@si.edu)

**Nathan Swenson**

Department of Biology  
University of Maryland, College Park, MD, 20742  
[swenson@umd.edu](mailto:swenson@umd.edu)

**Stuart Davies**

Director and Frank H. Levinson Chair, Senior Staff Scientist  
Smithsonian Tropical Research Institute  
202-633-0961  
[daviess@si.edu](mailto:daviess@si.edu)