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EDUCATION :

University of Connecticut, Ecology and Evolutionary Biology, USA. Spring 2006-
Doctorate's degree
Woods Hole Marine Laboratories, USA, July-August 2009
Workshop on Molecular Evolution.
Southern Illinois University, Department of Plant Biology, Carbondale, USA. Fall 2003- Dec. 2005
Master's degree.
Universidad de Costa Rica & Organization for Tropical Studies (OTS), Costa Rica. Jan.-Feb. 2003
Graduate course in Tropical Ecology and Conservation
University of Panamá, Bachelor's degree in Plant Biology with Major in Bryology. 1995-2003
Humboldt Field Research Institute & University of Maine, USA. June 2001
Field undergraduate course on biosystematics of temperate bryophytes

PUBLICATIONS:

Renzaglia, K.S., **J.C. Villarreal** & R.J. Duff. 2009. New insights into morphology, anatomy and systematics of hornworts. In *Bryophyte Biology II*, B. Goffinet & J. Shaw (eds). **(Book chapter)**
Villarreal, J.C., G. Hässel de Menéndez & N. Salazar Allen. 2007 *Nothoceros superbis* (Dendrocerotaceae), a new species of hornwort from the Neotropics. *The Bryologist* 110: 279-285.
Duff, R.J., **J.C. Villarreal**, D.C. Cargill & K.S. Renzaglia. 2007. Progress and challenges toward developing a phylogeny and classification of the hornworts. *The Bryologist*, 110: 214-243.
Villarreal, J.C. & K.S. Renzaglia. 2006. Sporophyte structure in the neotropical hornwort *Phaeomegaceros fimbriatus*: implications for phylogeny, taxonomy and character evolution. *International Journal of Plant Sciences* 167: 413-427.
Villarreal, J.C. & K.S. Renzaglia. 2006. Structure and development of *Nostoc* strands in *Leiosporoceros dussii* (Anthocerotophyta): a novel symbiosis in land plants. *American Journal of Botany* 93(5): 693-705. **(Cover)**.
Dauphin, G.; T. Pócs; **J. C. Villarreal** & N. Salazar Allen. 2006. Nuevos Registros de Hepáticas y Anthocerotófitas para Panamá. *Tropical Bryology* 27: 73-85.
Cargill, D.C.; R.J. Duff, **J.C. Villarreal** & K.S. Renzaglia. 2005. Generic concepts in hornworts: historical review, contemporary insights and future directions. *Australian Systematic Botany* 18: 7-16.
Duff, R.J.; D.C. Cargill, **J.C. Villarreal** & K.S. Renzaglia. 2004. Phylogenetic relationships of the hornworts based on *rbcL* sequence data: novel relationships and new insights. *Monographs in Systematic Botany from the Missouri Botanical Garden* 98: 41-58. (Book chapter)

PUBLISHED ABSTRACTS (*Speaker):

Villarreal, J.C. *, K. McFarland & B. Goffinet. 2008. Phylogenetic relationships of the *Nothoceros* alliance and the origin of the Appalachian Endemic *Megaceros aenigmaticus*. Botanical Society of America, National Congress, Vancouver.
Villarreal, J.C. * & K. S. Renzaglia. 2005. Structural innovations in the gametophyte of *Leiosporoceros dussii* (Steph.) Hässel: new insights into hornwort evolution. Botanical Society of America, National Congress, Austin. Honorable Mention in the Symposium.
Villarreal, J. C.*; R. J. Duff and K. S. Renzaglia. 2005. Anatomical and ultrastructural innovations in *Leiosporoceros dussii* (Steph.) Hässel. XVII International Botanical Congress, Vienna, Austria, p. 450.
Villarreal, J.C.*; S. Schuette, J. Duff, D.C. Cargill & K.S. Renzaglia. 2004. New insights in hornwort character evolution. Botanical Society of America, National Congress, Utah.
Villarreal, J.C.*; S. Schuette, J. Witters, K.S. Renzaglia & W. Taylor. 2004. Comparative morphological and ultrastructural survey of hornwort spores. Botanical Society of America, Utah.

Villarreal Aguilar, J.C.* & N. Salazar Allen. 2002. Estudio preliminar de la morfología y distribución geográfica del género *Megaceros* en Panamá. In: Rangel, J.O., J. Aguirre C. & M.G. Andrade C. (eds). Libro de Resúmenes 8 vo Congreso Latinoamericano y Segundo Colombiano de Botánica, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá.

INVITED TALKS:

Villarreal, J.C. *, K. McFarland & B. Goffinet. 2009. Diversification of the genus *Nothoceros* and Pleistocene origin of the Southern Appalachian *N. aenigmaticus*. Early Land Plants Today/Encyclopedia of Life Meeting. Field Museum, Chicago.

Villarreal, J.C. *, K. McFarland, K.S. Renzaglia & B. Goffinet. 2009. Filogenia de los Antocerotes y tiempo de diversificación del género *Nothoceros*. V Congreso Colombiano de Botánica, Nariño, Colombia.

Villarreal, J.C.*, R.J. Duff & K. S. Renzaglia. 2008. New insights into morphology, anatomy and systematics of hornworts. Department of Botany, The Field Museum, Chicago, USA.

Renzaglia, K.S., **J.C. Villarreal**, S.Schuette, J. Duckett* & R. Ligrone. 2007. Evolution of the hornwort chloroplast unveiled. World Conference of Bryology, Malaysia. Invited lecture to K. S. Renzaglia.

Villarreal, J.C.* & K. S. Renzaglia. 2007. Hornwort biology: Phylogeny, character evolution and symbiotic association with cyanobacteria. Department of Biology, University of New Mexico, Albuquerque, USA.

Villarreal, J.C. & K. S. Renzaglia. 2006. Innovaciones anatómicas y ultraestructurales en antocerotes Neotropicales: los géneros *Leiosporoceros* y *Phaeomegaceros*. IX Congreso Latinoamericano de Botánica-VII Simposio Latinoamericano de Briología: morfología, sistemática y ecología de briofitos. Santo Domingo, República Dominicana.

Renzaglia, K.S.; **J.C. Villarreal***, S. Schuette & R. J. Duff. 2004. Morphological diversity and the evolution of hornworts: a retrospective synopsis. XV World Congress of the International Association of Bryologists, Mérida, Venezuela. Invited lecture to K. S. Renzaglia.

PROFESSIONAL EXPERIENCE:

Biodiversity Synthesis Group-Encyclopedia of Life-The Field Museum, Chicago. May. 2009-

Organization and compilation of a worldwide checklist of hornworts and identification of biodiversity hotspots with scientists from New Zealand, USA and Australia.

UCONN, Department of Ecology and Evolutionary Biology. Jan.- May 2009

Teaching assistant (TA) on the upper level class: Biology of Bryophytes and Lichens

The Field Museum, Chicago. Pritzker Laboratory for Molecular Systematics. May-June 2008

Visiting researcher developing microsatellites for hornworts and collaboration in project on bryophyte diversity with Dr. Matt von Konrat

UCONN, Department of Ecology and Evolutionary Biology. Jan. 2006-Dec 2009

Teaching assistant (TA) on Introduction to Biology and Botany.

Southern Illinois University, Department of Plant Biology Aug. 03-Dec. 2005

Research assistant in Dr. Karen Renzaglia's lab working on the project: Collaborative Research, Biodiversity, Phylogeny and Biogeography of Hornworts.

- Gathering ultrastructural and anatomical data, collecting specimens, doing taxonomic work, preparing illustrations, doing phylogenetic analyses and writing papers.

Southern Illinois University, Department of Plant Biology. Aug.-Dec. 2004

TA course 300 level: Plant diversity

Smithsonian Tropical Research Institute (STRI), Panamá. May-Jul. 2003

Intern in the Molecular Biology Laboratory and the Bryophyte Systematics Lab

Supervisors: Dr. Eldredge Bermingham and Dr. Noris Salazar Allen

Smithsonian Tropical Research Institute, Panamá. Mar.-Apr. 2003 & Jul. 2001-Sept. 2002

Research Assistant in Botany. Supervisor: Dr. Noris Salazar Allen

University of Panamá & Autoridad del Canal de Panamá. June 2001

Field assistant in botany in the environmental assessment of the canal expansion

McGill University, City of Knowledge, Panamá. Jan.-Apr. 2001

Teaching Assistant for three undergraduate level courses in the Panamá Field Study Semester

Smithsonian Tropical Research Institute (STRI), Panamá. May-Jun. 2000

Field Assistant in the census of the Knigh-Lang Plot & Fertilizer Project, Barro Colorado Island

University of Panamá, National Herbarium, Panamá. Jul. 1999-Feb. 2000

Technical Assistant. Supervisor : Mireya Correa (M.Sc.)

RESEARCH GRANTS:

2009. Doctoral Dissertation Fellowship - \$2000

2009. Doctoral dissertation Improvement Grant (National Science Foundation) - \$9454

2009. Ronald Bamford Endowment Fund Research Grant, EEB, UCONN - \$ 700

2008. Southern Appalachian Botanical Society- \$ 300

2008. Ronald Bamford Endowment Fund Research Grant, EEB, UCONN - \$ 1100

2008. International Association of Plant Taxonomists - \$ 1000

2008. Smithsonian Tropical Research Institute (STRI). Funding for the exploratory project "Barcoding the Bryophytes of Panama ". Main PI : Dr. Laura Lowe Forrest (Botanical Garden of Edinburgh), co-PI Noris Salazar Allen (STRI) and **Juan Carlos Villarreal** (hornwort section of the project) - \$ 2000

2007. Stanley Green Award from International Association of Bryologists - \$ 1000

2007. Ronald Bamford Endowment Fund Research Grant - \$ 1000

2006. Ronald Bamford Endowment Fund Research Grant - \$ 1000

2004. Botanical Society of America. Graduate research award - \$ 500

2002-2003. Andrew W. Mellon Foundation fellowship at the Biology and Evolution Laboratory in Naos, Panamá through STRI - \$3000.

AWARDS

- The William Sullivant award (recognizing the best paper in bryology published in the Bryologist in the year 2007) from the American Bryological and Lichenological Society for their paper entitled "Progress and challenges toward developing a phylogeny and classification of the hornworts"
- The Michael Hogan (UCONN President) Summer Graduate Research Award only given to five student among 60 nominated candidates (by their professors) during the year 2009 at UCONN.

TRAVEL AWARDS:

2009. Extraordinary Doctoral Travel Award. Graduate School, UCONN

2005. William Steere Foundation of the NY Botanical Garden.

2005. American Bryological and Lichenological Society.

2004. Office of Research Development and Administration, and Department of Plant Biology, SIUC.

2004. American Bryological and Lichenological Society.

2004. Southern Illinois University Carbondale.

2003. Organization of Tropical Studies (OTS) and University of Costa Rica

2002. Corredor Biológico Mesoamericano del Pacífico Panameño.

2001. Humboldt Field Research Institute.

1999. Smithsonian Tropical Research Institute

AD-HOC REVIEWER FOR:

The Bryologist; Cryptogamie, Bryologie-Lichénologie; Fieldiana; Journal of Experimental Botany; Cambridge University Press; Inaugural member of the editorial board of Acta Biologica Panamense

FIELD WORK (mostly collecting hornworts, organized by JCVA*):

*Panamá, Costa Rica, Venezuela (Mérida), *Dominican Republic, *USA (especially Southern Appalachians),

*Mexico (Puebla, Morelos), Colombia (Nariño).