**Melanie L.J. Stiassny** February 2014

Division of Vertebrate Zoology

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**Interests**

Systematics and evolutionary morphology of tropical freshwater fish faunas, including classical descriptive anatomy, geometric morphometrics, CT and MRI scanning for hard and soft tissue visualization, and 3D reconstruction for spatial and volumetric analyses. Revisional taxonomic expertise in families spanning the teleost tree of life, and morphological and molecular phylogenetic studies of diverse teleostean taxa. Current projects center on the characterization of hyperdiverse regions in central Africa (Congo Basin and Lower Guinean ichthyological provinces) in a research program seeking to locate and document ichthyological diversity, and understand how that diversity is partitioned both geographically and phylogenetically, clarify the evolutionary mechanisms underlying recovered patterns of species diversification applying population genetic and phylogeographic components that integrate novel hydrographic and bathymetric data at varing geographic scales. Current work also seeks to document and highlight trends in aquatic biodiversity status and decline to help inform conservation practitioners, NGO’s and governmental agencies develop regional conservation strategies. Key to this is the development and mentoring of in-country taxonomic expertise, for which an active graduate program is maintained in collaboration with the University of Kinshasa, Democratic Republic of Congo, to promote ichthyological training of Congolese nationals.

**Education**

Royal Society Postdoctoral Fellowship, 1980-1983, Rijksuniversiteit and Rijksmuseum, Leiden, The

Netherlands.

Ph.D.,1980, Zoology, University of London, 1980.

B.Sc., 1976, Zoology, First Class Honors, University of London, 1976

**Positions**

1997-present: Herbert R. and Evelyn Axelrod Research Curator,Department of Ichthyology, American

Museum of Natural History.

2008-present: Professor, Gilder Graduate School, Program in Comparative Biology, American Museum of

Natural History

1997-2001: Chair, Department of Ichthyology, American Museum of Natural History.

1992-1997: Associate Curator, Department of Herpetology and Ichthyology, American Museum of Natural

History.

2003-present: Adjunct Professor, Department of Ecology, Evolution and Environmental Biology (E3B),

Columbia University.

1997-2003: Adjunct Professor, Center for Environmental Research and Conservation (CERC), Columbia

University.

1992-present: Adjunct Professor, City University of New York.

1987-1992: Assistant Curator, Department of Herpetology and Ichthyology, American Museum of Natural

History.

1983-1987: Assistant Professor, Dept. of Organismic and Evolutionary Biology, Harvard University.

**Grants (last five years)**

2012-2013: NSF DEB 1209573. Dissertation Research: Analyzing trait-dependent diversification in

lanternfishes (Scopelomorpha: Myctophidae). PI: Stiassny, co-PI Denton, $9,454.

2011-2013: NSF OISE 1136895. Dissertation Research: The molecular evolution of a blind cichlid endemic

to the Semocratic Republic of Congo, nd the democratization of DNA. PI: Stiassny, co-PI

Lowenstein, $14,997.

2006-2010: NSF DEB 0542540. Evolution in a Vortex: An Inventory of the Fishes of the Lower

Congo River Rapids. PI: Stiassny, co-PI Schelly, $422,953.

2008-2009: NSF DRL 0824302. Evolution in a Vortex: Public Outreach on Freshwater Science in the

Congo River. PI: Stiassny, co-PI: Trakinski, $68,883.

**International Fieldwork and Collection Study (last five years)**

*Fieldwork*:

2013: Republic of Congo, Brazzaville region and Democratic Republic of Congo, Maluku region.

2011: Democratic Republic of Congo, Kinshasa and Bandundu Provinces: Nsele and Mayi-Ndombe Rivers.

2010: Democratic Republic of Congo, Bandundu Province: Middle Congo R iver and Kasai, Malebo- Tshimbiri.

2009: Democratic Republic of Congo, Kinshasa Province: Nsele River & Bas Congo Province: Lower Congo

River, Luozi.

2008: Democratic Republic of Congo, Bas Congo Province: Lower Congo River, Luozi-Pioka.

2008: Cameroon, Sanaga.

*Collection Study:*

2012: United Kingdom, Natural History Museum, London

2010: Sweden, Naturhistoriska Riksmuseet, Stockholm

2009: Germany, Zoologische Staatssammlung, Munich

2008: Switzerland, Muséum d'Histoire Naturelle de la Ville de Genève

**Teaching and Mentoring (last five years)**

RGGS: AAFC member (2010-2013); Chair, AAFC Postdoctoral Mentoring Task Force 2010-2013;

Grantsmanship mock panelist (2009, 2012, 2013);

*Postdoctoral Fellows*

Jairo Arroyave, Axelrod Research Fellow, *Systematics of ostariophysan fishes*. 2013-

TeYu Liao, Axelrod Research Fellow, *Systematics of African chedrins (Teleostei: Cyprinidae: Danioninae)*, 2012-2013.

Jeffrey Markert, Axelrod Research Fellow, *Population structure among lower Congo cichlids*, 2009-2010.

*Graduate Students*

Dawn Roje (RGGS), PhD, *Systematics of flatfishes*, co-advisor, 2010-present.

John Denton (RGGS), PhD, *Morphology and Phylogeny of Myctophiformes with Applications in Phylogenetic*

*Methodology,* principal advisor, 2009-2013.

Jake Lowenstein (AMNH-Columbia), PhD, *Evolutionary Genetics of Lamprologus lethops, a blind cichlid from the*

*lower Congo Rapids*, co-advisor, 2006-2013.

Raoul Monsembula (University of Kinshasa), PhD, *Ichthyological diversity and conservation in the Nsele River, DR*

*Congo*, co-advisor, 2008-present.

Justin Jose Mbimbi (University of Kinshasa), PhD, *Ichthyological diversity and conservation in the Lulua River, DR*

*Congo,* co-advisor, 2009-2013.

Tobit Lyandja (University of Kinshasa), Msc, *Ichthyological diversity and conservation in the Maindombe River, DR*

*Congo*, co-advisor, 2010-2013.

Nathan Fedrizzi (Columbia University), Msc, *Phylogeography of the dwarf seahorse in the Gulf of Mexico*, major

advisor, 2011-2013.

Jairo Arroyave (AMNH-CUNY), PhD, *Ostariophysan Systematics*, dissertation committee member, 2009-

2013.

*Undergraduates* (\*NSF Research Experience for Undergraduates Program)

Liberty Calakos, Northeastern University, 2012; \*Emily Pitcairn, Florida State University, 2010;

*High School Interns*

Lili Ramos 2013-2014; Daniel Ramos 2010-2012;

**Selected Committee Membership and Science Advisory Roles**

IUCN SSC: Freshwater Specialists Group, Madagascar Regional Chair, current; Pan-African Freshwater

Biodiversity Assessment.*Cooordinator for central African assessment* (2007-2011) <http://www.iucn.org/about/work/programmes/species/about_ssc/specialist_groups/directory_specialist_groups/directory_sg_fishes/>

PAFFA (PanAfrican Fish and Fisheries Association), Scientific Committee Member 1998-present; Organizing

Committee PAFFA4, Addis Ababa, (Sept 2008); Organizing Committee PAFFA5, Bujumbura, Burundi,

(Sept 2013).

National Geographic Society, Conservation Trust: *Advisory Board Member*

<http://www.nationalgeographic.com/conservation/members.html>

International Foundation for Science (IFS),*Mission* to build scientific capacity of developing

countries in sciences related to the sustainable management of biological and water resources.*Scientific*

*Advisor*, Aquatic Resources (<http://www.ifs.se/>

**Selected Public Education and Science Dissemination**

The Guardian <http://www.guardian.co.uk/science/grrlscientist/2012/jan/03/1>

Career Girls <http://www.careergirls.org/careers/ichthyologist>

CBS-NSF <http://vimeo.com/channels/nsf#24733777>

TedxBroadStreetNY <http://www.youtube.com/watch?v=AdU1PgLb03g>

AudreyQuinn Audio <http://audreyquinnaudio.com/?p=202>

The New York Times <http://scientistatwork.blogs.nytimes.com/author/melanie-stiassny/>

AMNH Science Bulletin: Evolution in Action <http://www.youtube.com/watch?v=tObYa9KQb8w&feature=relmfu>

Inside the Collections: Ichthyology at AMNH <http://www.youtube.com/watch?v=H0JM1WUU0PM>

Scholastic: Science Explorations <http://www2.scholastic.com/browse/collection.jsp?id=601>

National Geographic Explorer Special

<http://channel.nationalgeographic.com/series/explorer/3826/Overview>

The Colbert Report, “Water is Life”, World Water Day

<http://www.colbertnation.com/the-colbert-report-videos/164483/march-20-2008/water-is-life>

National Science Foundation: Congo Project featured in NSF Discoveries <http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=111518&org=NSF>

**Publications (last five years)**

2013 Arroyave, A., Denton, J.S.S. and Stiassny, M.L.J. (2013). Are characiform fishes Gondwanan

in origin? Insights from a time-scaled molecular phylogeny of the Citharinoidei (Ostariophysi:

Characiformes). *PLOS ONE* 8(10): e77269. doi:10.1371

2013 Stiassny, M.L.J., Denton, J.S.S. and Monsembula Iyaba, R.J.C. (2013). A new

ectoparasitic distichodontid of the genus *Eugnathichthys* (Characiformes: Citharinoidei) from the

Congo basin of central Africa, with a molecular phylogeny for the genus. *Zootaxa*, 3693(4), 479-490

2013 Monsembula Iyaba, R.J.C., Liyandja, T. & Stiassny, M.L.J. (2013). Fishes of the N’Sele River

(Pool Malebo, Congo Basin, Central Africa): a list of species collected in the main channel and affluent

tributaries, Kinshasa Province, Democratic Republic of Congo. *Check Li*st, 9(5), 941-956.

2013 Monsembula Iyaba, R.J.C. & Stiassny, M.L.J. (2013). Fishes of the Salonga National Park (Congo basin, central Africa): a list of species collected in the Luilaka, Salonga, and Yenge Rivers (Equateur Province, Democratic Republic of Congo). *Check List*, 9(2), 246-256.

2012 Mamonekene, V. and Stiassny, M.L.J. (2012) Fishes of the Du Chaillu Massif, Niari Depression,

and Mayombe Massif (Republic of Congo, west-central Africa): A list of species collected in tributaries of

the upper Ogowe and middle and upper Kouilou-Niari River basins. *Check List*, 8(6), 1172-1183.

2012 Schobert, C.S., Stiassny, M.L.J., Schwab, I.R., Zeiss, C., Schelly, R.C. & Dubielzig, R.R. (2012)

Comparative ocular anatomy in a blind African cichlid fish, *Lamprologus lethops*. *Veterinary*

*Ophthalmology*. DOI 10.1111/vop.12006 (pub online 11.2012)

2012 Liao, T.Y., Arroyave, J. & Stiassny, M.L.J. (2012) Diagnosis of Asian *Raiamas* (Teleostei:

Cyprinidae: Chedrina) with comments on chedrin relationships and previously proposed diagnostics for

*Opsaridium* and *Raiamas*. *Ichthyological Research*, 59, 328-341.

2012 Mamonekene, V. & Stiassny, M.L.J. (2012) A new *Bathyaethiops* (Characiformes, Alestidae) from

the Lékoumou River (Kouilou-Niari basin) in the Republic of Congo: the first record of the genus in the

Lower Guinean Ichthyofaunal Province. *Copeia* 2012, 3, 478-483.

2012 Mbimbi, J.J. & Stiassny, M.L.J. (2012). A new *Alestopetersius* (Characiformes: Alestidae) from the

Kwilu River (Kasai basin) of central Africa; with a phylogeny for the genus and synonomy of

*Duboisialestes*. *Zootaxa* 3166, 59-68.

2012 Mbimbi, J.J. & Stiassny, M.L.J. (2012). A new *Alestopetersius* (Characiformes: Alestidae) from the

Kwilu River (Kasai basin) of central Africa; with a phylogeny for the genus and synonomy of

*Duboisialestes*. *Zootaxa* 3166, 59-68.

2011 Mbimbi, J.J. & Stiassny, M.L.J. (2011) Fishes of the Kwilu River (Kasai basin, central

Africa): a list of species collected in the vicinity of Kikwit, Bandundu Province Democratic Republic of Congo. *Check List* 7(5), 691-699.

2011 Arroyave, J & Stiassny, M.L.J.(2011) Phylogenetic relationships and the temporal context

for the diversification of African characins of the familyAlestidae (Ostariophysi: Characiformes):

evidence from DNA sequence data. *Molecular Phylogenetics and Evolution* 60(3), 385-397.

2011 Lowenstien, J., Osumndson, T., Tshibwabwa, S., Becker, S., Hanner, R., & M.L.J. Stiassny

(2011). Incorporating DNA barcodes into a multi-year inventory of the fishes of the hyperdiverse Lower

Congo River, with a multi-gene performance assessment of the genus *Labeo* as a case study. *Mitochondrial*

*DNA*, 21(S2): 1-19.

2011 Stiassny, M.L.J., Brummett, R.E., Harrison, I.J., Monsembula, R. & Mamonekene, V. (2011).

The status and distribution of the freshwater fishes of Central Africa. In: *The* *Status and Distribution of*

*freshwater biodiversity in Central Africa*. Eds. Brooks, E.G.E., Allen, D.J., & Darwall, W.T., IUCN Red List of

Threatened Species, Regional Assessment, IUCN: Gland, Switzerland, Pp. 27-46.

2011 Brummett, R.E., Stiassny, M.L.J., & Harrison, I.J. (2011). Background. In: *The Status and*

*distribution of freshwater biodiversity in Central Africa*. Eds. Brooks,E.G.E., Allen, D.J., & Darwall, W.T, IUCN

Red List of Threatened Species, Regional Assessment, IUCN: Gland, Switzerland, Pp. 1-20.

2011 Snoeks, J., Harrison, I.J.H., & Stiassny, M.L.J. (2011). Status and distribution of freshwater fishes.

In: Darwall, W.R.T., Smith, K.G., Allen, D.J., Holland, R.A, Harrison, I.J., & Brooks, E.G.E.

(Eds.). 2011. *The Diversity of Life in African Freshwaters: Under Water, Under Threat. An analysis of the status and*

*distribution of freshwater species throughout mainland Africa*. Cambridge, United Kingdom and Gland,

Switzerland: IUCN, Pp. 42-91.

2011 Neumann, D., M.L.J. Stiassny & U. Schliewen (2011). Two new sympatric *Sarotherodon* species

(Pisces: Cichlidae) endemic to Lake Ejagham, Cameroon, west-central Africa, with comments on the

*Sarotherodon galilaeus* species complex. *Zootaxa* 2765: 1-20.

2010 Markert, J.A., Schelly, R.S. & M.L.J. Stiassny(2010). Genetic isolation and morphological divergence mediated by high-energy rapids in two cichlid genera from the lower Congo rapids. *BMC Evolutionary Biology* 2010, 10:149.

2010 M.L.J. Stiassny**,** C. Revenga & P. Comer (2010). Aquatic Ecosystems: Diversity and Dynamism. In:

*Fresh Water – The Essence of Life*. Chapter 2. R.A. Mittermeier, T. Farrell, I. Harrison, T.M. Brooks & A.

Upgren (eds). CEMEX/ILCP, Virginia, USA, pp. 93-116.

2010 Stiassny, M.L.J., (and 9 co-authors) (2010). Water resources, forests, and ecosystem goods and services. In: *The Forests of the Congo basin. State of the Forest.* Editors: de Wasseige, C., Devers, D., de Marcken, P., Eba’a Atyi R., Nasi, R. & Mayaux Ph., 2009, Luxembourg: Publications Office of the European Union, pp. 141-157.

2010 M.L.J. Stiassny**,** G. de marchi & A. lamboj(2010).A new species of *Danakilia* (Teleostei, Cichlidae)

from Lake Abaeded in the Danakil Depression of Eritrea, (East Africa). *Zootaxa* 2690: 43-52.

2010 Sparks, J.S. & M.L.J. Stiassny (2010). A new species of *Ptychochromis* from northeastern Madagascar (Teleostei: Cichlidae), with an updated phylogeny and revised diagnosis for the genus. *Zootaxa* 2341: 33-51.

2010 Stiassny, M.L.J. (2010) What’s in a name. Monitoring the “Miner’s Canary” in the Congo. In: *Written in Water.* (Ed. I. Salina), National Geographic Press, Washington, DC, pp.120-129. (non peer reviewed)

2010 Stiassny, M.L.J. (2010) Actinopterygii. Online essay, Grzimek’s Animal Life Encyclopedia.

2009 Stiassny, M.L.J., Schelly, R.C. & V. Mamonekene (2009). A new *Alestes* (Characiformes, Alestidae) from the Mpozo River in the Democratic Republic of Congo. *Copeia* 2009, 1: 110-116.

2009 Farrell, T, Harrison, I, Allan, D., Braun, D., Emerton, L., Higgins, J., McIntyre, P., Revenga, C., Stiassny, M**.** & M. Totten (2009). Life depends on it: Freshwater. Chapter 11 In: *The* *Wealth of Nature: Ecosystem Services, Biodiversity, and Human Well-Being.* McNeely, J.A., Mittermeier, R.A, Brooks, T.M., Boltz, F. and Ash, N. editors, CEMEX/ILCP, Virginia, USA, pp. 167-179.

2009 Vreven, E. & M.L.J. Stiassny (2009). *Mastacembelus simbi*, a new dwarf spiny-eel (Synbranchiformes: Mastacembelidae) from the lower Congo River. *Ichthyo. Explor.* *Freshwaters*, 20(3): 213-222.