

DR. PATRICIA LU-IRVING

Evolutionary Ecology, Science & Conservation
Royal Botanic Gardens Sydney
Mrs Macquaries Road, Sydney NSW 2000
p.luiring@gmail.com
+61 457 129 203
<http://patluiring.weebly.com/>

Professional Preparation

- 2015 – 2017 **University of Arizona**, Postdoctoral Research Associate
PI: Dr. K.M. Dlugosch
- 2007 – 2013 **University of Washington, Ph.D.**, Biology
Advisor: Dr. R.G. Olmstead
- 2001 – 2005 **University of Sydney, B.Sc. (Hons.)**, Biology
Advisor: Dr. M.J. Henwood

Other Appointments

- 2018 – present Technical Officer, Royal Botanic Gardens Sydney
- 2014 – 2015 Research Associate, Univ. of Washington Herbarium
- 2013 – 2015 Museum Specialist (illustrator), Univ. of Washington Herbarium
- 2013 – 2014 Lecturer in Biology, University of Washington
- 2005 – 2007 Research Assistant, Rutgers University

Publications and Manuscripts

- Lu-Irving P**, Marx HE, Dlugosch KM. 2018. Leveraging contemporary species introductions to test phylogenetic hypotheses of trait evolution. *Current Opinion in Plant Biology* **42**: 95-102.
- Fitzpatrick CR*, **Lu-Irving P***, Copeland J, Guttman DS, Wang PW, Baltrus DA, Dlugosch KM, Johnson MTJ. 2018. Chloroplast Sequence Variation and the Efficacy of Peptide Nucleic Acids for Blocking Host Amplification in Plant Microbiome Studies. *Microbiome* 6 (1): 144. ***Equal contributors.**
- Frost L, Tyson SM, **Lu-Irving P**, O'Leary N, Olmstead RG. 2017. Origins of North American arid-land Verbenaceae: more than one way to skin a cat. *American Journal of Botany* **104**: 1708-1716.
- O'Leary N, **Lu-Irving P**, Moroni P, Siedo S. 2016. Taxonomic revision of *Aloysia* (Verbenaceae, Lantaneae) in South America. *Annals of the Missouri Botanical Garden* **101**: 568-609.
- Lu-Irving P**, O'Leary N, O'Brien A, Olmstead RG. 2014. Resolving the genera *Aloysia* and *Acantholippia* within tribe Lantaneae (Verbenaceae), using chloroplast and nuclear sequences. *Systematic Botany* **34**: 644-655.

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- Lu-Irving P**, Olmstead RG. 2013. Investigating the evolution of Lantaneae (Verbenaceae) using multiple loci. *Botanical Journal of the Linnean Society* **171**: 103-119.
- O'Leary N, Calviño CI, Martinez S, **Lu-Irving P**, Olmstead RG, Múlgura ME. 2012. Evolution of morphological traits in Verbenaceae. *American Journal of Botany* **99**: 1778-1792.
- Wang Y, Boyd E, Crane S, **Lu-Irving P**, Krabbenhoft D, King S, Dighton J, Geesey G, Barkay T. 2011. Environmental conditions constrain the distribution and diversity of archaeal *merA* in Yellowstone National Park, Wyoming, USA. *Microbial Ecology* **62**: 739-752.
- Marx HE, O'Leary N, Yuan Y-W, **Lu-Irving P**, Tank DC, Múlgura ME, Olmstead RG. 2010. A molecular phylogeny and classification of Verbenaceae. *American Journal of Botany* **97**: 1647-1663.
- Henwood MJ, **Lu-Irving P**, Perkins AJ. 2010. Can molecular systematics provide insights into aspects of the reproductive biology of *Trachymene* Rudge (Araliaceae)? *Plant Diversity and Evolution* **128**: 85-110.
- Wang Y, Freedman Z, **Lu-Irving P**, Kaletsky R, Barkay T. 2009. An initial characterization of the mercury resistance (*mer*) system of the thermophilic bacterium *Thermus thermophilus* HB27. *FEMS Microbiology Ecology* **67**: 118-129.

In preparation, review, and revision (manuscripts available on request):

- Lu-Irving P**, Salimena FR, Silva TRS, Viccini LF, Bitencourt C, Olmstead RG. In prep. Phylogeny, fruit evolution, and diversification rates in *Lantana* and *Lippia*.
- Lu-Irving P**, Harencar J, Sounart H, Welles SR, Swope SM, Baltrus DA, Dlugosch KM. In revision for *New Phytologist*. Escape from bacterial diversity: potential enemy release in invading yellow starthistle (*Centaurea solstitialis*) microbiomes. Preprint available at <https://doi.org/10.1101/119917>

Presentations

- 2018 Royal Botanic Gardens Science & Conservation seminar; Sydney NSW Australia
2017 Systematics 2017 (ASBS/SASB joint meeting); Adelaide SA Australia
2017 University of Arizona Herbarium seminar; Tucson AZ USA
2016 University of Arizona EEB seminar; Tucson AZ USA
2016 Evolution 2016; Austin TX USA
2015 University of Arizona EEB seminar; Tucson AZ USA
2015 Botany Conference; Edmonton AB Canada
2012 Botany Conference; Columbus OH USA (George R. Cooley award session)
2011 International Botanical Congress; Melbourne VIC Australia
2010 Evolution Meetings; Portland OR USA
2009 Botany Conference; Snowbird UT USA
2008 Botany Conference; Vancouver BC Canada

Awards and Funding

2017 Successful crowdfunding campaign via University of Arizona Foundation
2012 University of Washington: Melinda Denton Writing Fellowship
2011 NSF/ASPT: International Botanical Congress Travel Award
2010 American Society of Plant Taxonomists: Graduate Research Award
2009 Society of Systematic Biologists: Graduate Research Award
2009 Botanical Society of America: Graduate Research Award
2008 NSF: Graduate Research Fellowship honorable mention
2008 University of Washington: Giles Award for Botanical Field Research
2008 Virginia Native Plant Society: Delzie Demaree Travel Award
2007 University of Washington: Plant Systematics Graduate Fellowship

Service and Outreach

Manuscript reviews

Reviewer for: Botanical Journal of the Linnean Society, Annals of Botany, BMC Evolutionary Biology, PeerJ, Phytotaxa, Willdenowia, Journal of Negative Results

Outreach and volunteer activities

2018 – present Tour guide (Science), Royal Botanic Gardens Sydney
2018 – present Volunteer supervisor (Science), Royal Botanic Gardens Sydney
2017 – 2018 Special Projects Volunteer, Royal Botanic Gardens Sydney
2016 Mentor, PlantingScience (plantingscience.org)
2014 – 2015 Instructor, Washington Native Plant Society Stewardship training
2012 – 2014 Population monitor, Washington Rare Plant Care and Conservation
2012 – 2013 Contributor, *Science Positive* (scipos.blogspot.com)
2008 – 2013 Collections volunteer, University of Washington Herbarium
2008 – 2013 Tour guide, University of Washington Botany Greenhouse

Professional Memberships

American Society of Plant Taxonomists, Australasian Systematic Botany Society, Botanical Society of America, Society for the Study of Evolution

Field Experience

Australia: New South Wales, Jun 2018, Sep 2004; Western Australia, Oct 2004; **South & Central America:** Puerto Rico & Dominican Republic, Aug – Sep 2012; Brazil, Nov – Dec 2010; Peru, Mar 2009; **USA:** Florida, Aug 2012; Washington, Jul 2012; Idaho, Jun 2011; Oregon, Jul 2010; Montana, Jul 2008; Texas, Jun 2008; **Europe:** France & Spain, Jun – Jul 2015; **South Africa:** Nov 2008.

Teaching

Botany – University of Sydney BIOL 2030
TEACHING ASSISTANT: Mar – Apr 2018

Teaching (cont.)

Plant Classification and Identification – University of Washington BIOL 317

INSTRUCTOR: Jun – Aug 2014 (31 students)
Apr – Jun 2014 (120 students)
Jun – Aug 2013 (26 students)

TEACHING ASSISTANT: Mar – Jun 2013
Mar – Aug 2012
Jun – Aug 2011
Mar – Aug 2010
Jun – Aug 2009
Mar – Aug 2008

Introductory Biology – University of Washington BBIO 180, BIOL 180, BIOL 200

LAB INSTRUCTOR: Sep – Dec 2014 (37 students)

TEACHING ASSISTANT: Sep – Dec 2011
Jan – Mar 2008

Interdisciplinary Writing in Biology – University of Washington ENGL 299

INSTRUCTOR: Sep – Dec 2013 (20 students)

Cell and Molecular Biology – University of Washington

TEACHING ASSISTANT: Sep – Dec 2009

Supervision of Student Research

ROYAL BOTANIC GARDENS SYDNEY (2018 – present)
Thomas Pyne, M.S. student Macquarie University

UNIVERSITY OF ARIZONA (2015 – 2017):
Angela Kaczowka, M.S. student
Julia Harencar, currently M.S. student at California Polytechnic State University
Hailey Sounart
Albert Leotta
Joseph Aspinwall
Jake Wilkie

UNIVERSITY OF WASHINGTON (2008 – 2013)
Anna O'Brien (Hons. student), currently Ph.D. student at UC Davis
Ben Meersman (Hons. student)
Bailey Craig (Hons. student)
Shulamit Harkavy
Renee Takara
Michelle Noval