

# HERU HANDIKA

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119 Foster Hall  
 Baton Rouge, LA 70803

## EDUCATION

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<b>PhD</b>	Louisiana State University, Department of Biological Sciences Advisor: Dr. Jacob A. Esselstyn	2018-now
<b>MS</b>	University of Melbourne, Department of Zoology Graduated with distinction. Advisor: Dr. Kevin C. Rowe and Dr. Devi M. Stuart-Fox	2015-2017
<b>BS</b>	Andalas University, Department of Biology Advisor: Dr. Jabang Nurdin and Dr. Rizaldi	2008-2013

## UPCOMING MANUSCRIPTS

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- Handika H.**, Moncrieff, A. E., Del-Rio G., Canton, R., Rutledge, S. L., Hernández-Canchola, G., Babb-Biernacki, S. J. Chipps, A. S., Pérez-Amaya, N., Chornelia, A., Morales-Martínez, D. M., McCallum, Q., Thom, G., Esselstyn, J. A. In prep. NAHPU: A field cataloging application for efficient, repeatable, and inclusive museum-based evolutionary studies.
- Handika, H.**, Rowe, K.C., Achmadi, A.S., Swanson, M. T., and Esselstyn, J.A. In prep. A new species of *Frateromys* from the Northern Peninsula of Sulawesi, Indonesia.
- Giarla, T. C., Achmadi, A.S., Fabre, P. H., **Handika, H.**, Chipps, A. S., Swanson, M.T., Nations, J. A., Morni, M. A., William-Dee, J., Inayah, N., Jayanti, E. D., Nurdin, M.R.T.J., Griffin, K. E., Khan, F. A. A., Heaney, L. R., Rowe, K. C., Esselstyn, J. A. Accepted. Systematics and historical biogeography of *Crunomys* and *Maxomys* (Muridae: Murinae), with the description of a new species from Sulawesi and new genus-level classification. *Journal of Mammalogy*

## PEER-REVIEWED PUBLICATIONS

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- Handika, H.**, and Esselstyn, J.A. 2024. SEGUL: Ultrafast, memory-efficient, and mobile-friendly software for manipulating and summarizing phylogenomic datasets. *Molecular Ecology Resources*. <https://doi.org/10.1111/1755-0998.13964>
- Nations, J.A., Kohli, B.A., **Handika, H.**, Achmadi, A.S., Polito, M.J., Rowe, K.C. and Esselstyn, J. A. 2024. The roles of isolation and interspecific interaction in generating the functional diversity of an insular mammal radiation. *Oikos*, p.e10888. <https://doi.org/10.1111/oik.10888>
- Nations, J. A., **Handika, H.**, Mursyid, A., Butsa, R. D., Apandi, Achmadi, A. S. Esselstyn, J. A. 2024. Three new species of shrew (Soricidae: Crocidura) from West

- Sumatra, Indonesia: elevational and morphological divergence in syntopic, sister taxa. *Journal of Mammalogy*. <https://doi.org/10.1093/jmammal/gyad126>
4. Mursyid, A., Achmadi, A.S., Novarino, W., Handika, H., Nugroho, H.A., Anita, S., Adams, A.L., Rowe, K.M.C. and Rowe, K.C., 2023. Trypanosoma (Euglenozoa: Kinetoplastea) infections in rodents, bats, and shrews along an elevation and disturbance gradient in Central Sulawesi, Indonesia. *Records of the Australian Museum*, pp.663-671. <https://doi.org/10.3853/j.2201-4349.75.2023.1786>
  5. Achmadi, A.S., Fahri, F., Gazzard, A., **Handika, H.**, Inayah, N., Kennerley, R.J., Lanusi, A.A., Nangoy, M., Nurdin, M.R.T.J.P. and Rowe, K.C., Sheherazade. 2023. Conservation status and priorities for Sulawesi's unique small mammal fauna. *Oryx*, 57(6), pp.690-691. <https://doi.org/10.1017/S0030605323001059>
  6. Swanson, M. T., Henson, M. W., **Handika, H.**, Achmadi, A. S., Anita, S., Rowe, K. C., Esselstyn, J. A. 2023. Mycoplasmatataceae dominate microbial community differences between gut regions in mammals with a simple gut architecture. *Journal of Mammalogy*. <https://doi.org/10.1093/jmammal/gyac098>
  7. Esselstyn, J.A., Achmadi, A.S., **Handika, H.**, Swanson, M. T., Giarla, T.C. and Rowe, K.C., 2021. Fourteen new, endemic species of shrew (genus *Crocidura*) from Sulawesi reveal a spectacular island radiation. *Bulletin of the American Museum of Natural History*, 454(1), pp.1-108. <https://doi.org/10.1206/0003-0090.454.1.1>
  8. **Handika, H.**, Achmadi, A.S., Esselstyn, J.A., and Rowe, K.C. 2021. Molecular and morphological systematics of the *Bunomys* division (Rodentia: Muridae), an endemic radiation on Sulawesi. *Zoologica Scripta* 50(2), pp. 141–154. <https://doi.org/10.1111/zsc.12460>
  9. Nations, J.A., Mursyid, A., Busta, R.D., Adrian, S.P., **Handika, H.**, Achmadi, A.S. and Esselstyn, J.A., 2021. The first report of albinism in a Sundaland endemic rodent. *Mammalia*, 1 85(2), pp.168-172. <https://doi.org/10.1515/mammalia-2020-0047>
  10. Winterhoff, M.L., Achmadi, A.S., Roycroft, E.J., **Handika, H.**, Putra, R.T.J., Rowe, K.M., Perkins, S.L. and Rowe, K.C., 2020. Native and Introduced Trypanosome Parasites in Endemic and Introduced Murine Rodents of Sulawesi. *The Journal of Parasitology*, 106(5), pp.523-536. <https://doi.org/10.1645/19-136>
  11. Harapan, T.S., Agung, A.P., **Handika, H.**, Novarino, W., Tjong, D.H. and Tomlinson, K.W., 2020. New records and potential geographic distribution of Elongated Caecilian, *Ichthyophis elongatus* Taylor, 1965 (Amphibia, Gymnophiona, Ichthyophiidae), endemic to West Sumatra, Indonesia. *Check List*, 16(6), pp. 1695-1701. <https://doi.org/10.15560/16.6.1695>
  12. Esselstyn, J.A., Achmadi, A.S., **Handika, H.**, Giarla, T.C. and Rowe, K.C., 2019. A new climbing shrew from Sulawesi highlights the tangled taxonomy of an endemic radiation. *Journal of Mammalogy*, 100(6), pp.1713-1725. <https://doi.org/10.1093/jmammal/gyz077>
  13. Janra, M.N., Noske, R.A., Chornelia, A., **Handika, H.**, Mursyid, A., Agung, A. and Saputra, A., 2018. A second breeding record of Chestnut-naped Forktails *Enicurus*

- ruficapillus in Sumatra, and observations suggesting females alone incubate. *Kukila*, 21, pp.13-16.
14. Demos, T.C., Achmadi, A.S., **Handika, H.**, Rowe, K.C. and Esselstyn, J.A., 2017. A new species of shrew (Soricomorpha: Crocidura) from Java, Indonesia: possible character displacement despite interspecific gene flow. *Journal of Mammalogy*, 98(1), pp.183-193. <https://doi.org/10.1093/jmammal/gyw183>
  15. Demos, T.C., Achmadi, A.S., Giarla, T.C., **Handika, H.**, Rowe, K.C. and Esselstyn, J.A. 2016. Local endemism and within-island diversification of shrews illustrate the importance of speciation in building Sundaland mammal diversity. *Molecular ecology*, 25(20), pp.5158-5173. <https://doi.org/10.1111/mec.13820>
  16. Esselstyn, J.A., Achmadi, A.S., **Handika, H.** and Rowe, K.C., 2015. A hog-nosed shrew rat (Rodentia: Muridae) from Sulawesi Island, Indonesia. *Journal of Mammalogy*, 96(5), pp.895-907. <https://doi.org/10.1093/jmammal/gyv093>
  17. **Handika, H.**, Nurdin, J. and Rizaldi. 2013. Small Terrestrial Mammals Community on Mount Singgalang, West Sumatra. *J. Bio. U. A* 2(2), pp.103-109.

#### HONORS AND AWARDS

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<b>Ernst Mayr Award</b> Awarded by the Society of Systematic Biologists (SSB). SSB premier award given to the presenter of the outstanding student talk in systematics biology.	2024
<b>Murie Family Conservation Award</b> Awarded by the American Society of Mammalogists. To recognize outstanding contributions to the conservation of mammals and their habitats.	2023
<b>The Ron and Mary Neal Distinguished Graduate Student Fellowship</b> Provided by Louisiana State University Covered fellowship (\$12,777), tuition, and fees.	2023
<b>Graduate Student Association Award, Louisiana State University</b> Awarded to attend a conference in Alaska, USA (USD400)	2023
<b>Grants-in-Aid</b> Provided by the American Society of Mammalogists (USD1,500)	2021
<b>Graduate Student Research Award</b> Provided by the Society of Systematic Biologists (USD3,000)	2021
<b>Graduate Student Association Award, Louisiana State University</b> Awarded to attend a conference in Washington D.C, USA (USD400)	2019
<b>Biodiversity Information Fund for Asia</b> Provided by the Global Biodiversity Information Facility	2019

Co-Principal Investigator

Awarded twice (BIFA3\_17 and BIFA4\_23) (total amount ~EUR30,000)

**International Post Graduate Coursework Award, University of Melbourne** 2015

Awarded to distinguished international students enrolling in a coursework program.  
Approximately 50 students across the university per year (50% tuition fee remission, ~AUD15,000)

**Indonesia Endowment Fund for Education** 2015-2017

Distributed by the Indonesian Ministry of Finance

Awarded to study overseas.

Covered tuition, monthly stipends, thesis research, and conference travel costs.

**Mohammed Bin Zayed Species Conservation Fund** 2014 and 2015

Awarded to conduct scientific research on Sumatra, Indonesia

Awarded twice (total USD9,500)

**Student Creativity Award on Research** 2012

Provided by the Indonesian Ministry of Research and Education

Awarded to conduct scientific research (IDR10,000,000)

## PROFESSIONAL EXPERIENCE

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**Louisiana State University Museum of Natural Sciences, Mammal Department**

Curatorial Assistant, August 2018-Fall 2020

Preparation and curation of mammal specimens and their associated data.

Training and mentoring undergraduate students on specimen curation.

**Museums Victoria, Melbourne, Australia**

Research student, 2015-2017

Participated in fieldwork and mammal diversity assessments across Victoria, Australia.

Involved in a mammalian public exhibit showing mammalian specimen preparation for public visitors.

## TEACHING EXPERIENCE

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BIOL 2153	Principles of Genetics	Fall 2024
BIOL 4141	Mammalogy, <i>Louisiana State University, USA</i>	Fall 2021
BIOL 1209	Introduction to Biology, <i>Louisiana State University, USA</i>	Spring 2021
PAB125	Computer Application for Biology, <i>Andalas University, Indonesia</i>	Fall 2012

## WORKSHOP TAUGHT

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1. Molecular Analyses of Indonesian Mammals, *Generasi Biologi Indonesia* May 2024
2. Coding for Conservation: Integrating GitHub to Your Workflow, *Tambora Muda, RLadies Jakarta, and RLadies Bogor* April 2023
3. Introduction to Phylogenetics, *Andalas University, Indonesia* Jan 2022

**INVITED TALKS**

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1. Unraveling mammalian diversity in Indonesia: progress, challenges, and approaches, *the American Society of Mammalogists, USA. A plenary Student Speaker* June 2024
2. Diversity and Evolution of Indonesia's Rich Mammal Faunas, *Balai Konservasi dan Sumber Daya Alam, Sumatera Selatan, Indonesia.* September 2023
3. Leveraging the Digital Revolution to Improve Data Acquisition in the Field, *Indonesian Research and Innovation Agency (BRIN), Indonesia* April 2023
4. The Geography of Diversification Among Endemic Island Rodents on Sulawesi, Indonesia. Oral presentation. *LSU Museum of Natural Science, USA.* August 2018

**CONFERENCE TALKS**

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1. **Handika, H.** and Esselstyn, J. A. 2024. Rethinking software development for more accessible phylogenomic research and teaching. *3rd Joint Congress on Evolutionary Biology.*
2. **Handika, H.**, Moncrieff, A. E., Del-Rio G., Canton, R., Hernández-Canchola, G., Babb-Biernacki, S. J. Chipps, A. S., Rutledge, S. L., Pérez-Amaya, N., Chornelia, A., Morales-Martínez, D., Thom, G., Esselstyn, J. A. 2023. Leveraging the Digital Revolution to Improve Data Acquisition in the Field. *13<sup>th</sup> International Mammalogy Congress & 102nd Annual Meeting of The American Society of Mammalogists.*
3. **Handika, H.**, Achmadi, A.S., Rowe, Swanson, M. T., K.C, and Esselstyn, J.A. 2021. In situ diversification of Murine Rodents on Sulawesi, Indonesia. Oral presentation. *100<sup>th</sup> Annual Meeting of the American Society of Mammalogists, Virtual.*
4. **Handika, H.**, Achmadi, A.S., Esselstyn, J.A., and Rowe, K.C. 2019. In situ diversification of *Bunomys* (Muridae) on the isolated, topographically complex island of Sulawesi, Indonesia. Oral presentation. *99<sup>th</sup> Annual Meeting of the American Society of Mammalogists, Washington D.C, USA.*
5. **Handika, H.**, Achmadi, A.S., Esselstyn, J.A., and Rowe, K.C. 2017. Sulawesi after Wallace: multiple murine lineages support within island speciation across the northern peninsula of Sulawesi, Indonesia. Oral presentation. *12<sup>th</sup> International Mammalogical Congress, Perth, Australia.*
6. **Handika, H.** 2017. Cracking Sulawesi Biodiversity Enigma: Veering Indonesian Priorities. Oral presentation. *The 36<sup>th</sup> Indonesia Forum Postgraduate Roundtable, Melbourne, Indonesia.*
7. **Handika, H.**, Achmadi, A.S., Esselstyn, J.A., and Rowe, K.C. 2016. Biogeography and Phylogeny of the Two Most Diverse Murid Rodent Genera on Sulawesi, Indonesia. Oral presentation. *96<sup>th</sup> Annual Meeting of the American Society of Mammalogists, Washington D.C, USA.*

**PEER REVIEWS**

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Journal of Ecology and Evolution (1), Journal of Mammalogy (1), The Raffles Bulletin of Zoology (1), Biodiversitas Journal of Biological Diversity (1)

**FIELDWORK**

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1. Mt. Patah, Mt. Bandahara, & Mt. Kemiri, Sumatra, Indonesia August-December 2023
2. Mt. Gede, West Java, Indonesia February-April 2023
3. Black Gap WMA, Texas, USA April-May 2022
4. Davis Mountains, Texas, USA May 2021
5. Mt. Murud, Sarawak, Malaysia July-August 2019
6. Mt. Galang, Central Sulawesi, Indonesia July 2018
7. Mt. Talamau, Central Sulawesi, Indonesia March-April 2018
8. Mt. Torompupu, Central Sulawesi, Indonesia November-December 2017
9. Mt. Katopasa, Central Sulawesi, Indonesia August-September 2017
10. Solok Selatan, West Sumatra, Indonesia October 2017
11. Wilson Promontory National Park, Victoria, Australia June 2017
12. Grampians National Park, Victoria, Australia November 2016
13. Mt. Bawakaraeng, South Sulawesi, Indonesia October-November 2016
14. Mt. Latimojong, South Sulawesi, Indonesia July-August 2016
15. Mt. Ambang, North Sulawesi, Indonesia February-March 2016
16. Grampians National Park, Victoria, Australia November 2015
17. Mt. Talamau, West Sumatra, Indonesia June 2015
18. Runtu, Central Kalimantan, Indonesia December 2014
19. Mt. Tujuh and Mt. Masurai, Jambi, Indonesia September-October 2014
20. Samar Island, The Philippines June-July 2014
21. Cirebon, West Java, Indonesia May 2014
22. Bangka Island, Indonesia November-December 2013
23. Mt. Salak, Mt. Ijen, and Mt. Slamet, Java, Indonesia September-October 2013
24. Kota Waringin Barat, Central Kalimantan, Indonesia June-July 2013
25. Mt. Dako, Central Sulawesi, Indonesia March 2013
26. Mt. Kerinci and Mt. Tujuh, Jambi, Indonesia January 2013
27. Belitung Island, Indonesia January 2013
28. Mt. Singgalang, West Sumatra, Indonesia June-July 2012
29. Mt. Gandang Dewata, West Sulawesi, Indonesia May-June 2012
30. Mt. Malintang, West Sumatra, Indonesia April 2012
31. Marak Island, West Sumatra, Indonesia October 2011
32. Siberut Island, West Sumatra, Indonesia October 2010
33. Mt. Sago, West Sumatra, Indonesia September 2010
34. Angkola, North Sumatra, Indonesia July 2010
35. Mt. Merapi, West Sumatra, Indonesia June 2009

**SOFTWARE**

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Most familiar languages and frameworks: Rust, C++, C, Go, Dart, Flutter, Python, R, Shell, MAKE, CSS, and HTML.

GitHub profile: <https://github.com/hhandika>

Selected software:

1. SEGUL  
High-performance, memory-efficient phylogenomic command-line app, and programming language libraries. Written in Rust.
2. SEGUI  
A cross-platform GUI app built on top of SEGUL's high-performance phylogenomic software. Aimed at improving accessibility of phylogenomic studies. Written in Dart, Flutter, and Rust.
3. PySEGUL  
A Python wrapper of SEGUL's phylogenomic software. Aimed to provide high-performance, memory-efficient phylogenomic tools to Python programmers. Written in Python and Rust.
4. NAHPU (beta)  
A cross-platform GUI app to streamline natural history data collection from fieldwork to the museum database. Written in Dart, Flutter, and Rust.
5. ULLAR (beta)  
An ultrafast and scalable phylogenomic pipeline. Aimed to simplify phylogenomic data analyses with easy-to-install and reduced dependencies software. Written in Rust.
6. MDD app (beta)  
An app version of the Mammal Diversity Database (MDD), a curated database of mammalian taxonomy. Provide offline access, custom data export, and other unavailable features on the MDD website. Written in Dart, Flutter, and Rust.

#### **NEWS MEDIA PROFILES**

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1. The Indonesian Ministry of Finance Magazine, Media Keuangan, June 2017
2. DetikNews-ABC Australia Plus, 16 Januari 2017.

#### **MEDIA INTERVIEWS**

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1. Science Next: "What Could Recovery Look Like for Blazing Australia?", 27 January 2020.
2. Kompas.Com-ABC Australia Plus: "Kisah Mahasiswa Indonesia Terlibat Penemuan Tikus Hidung Babi", 26 November 2015.

#### **POPULAR ARTICLES**

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1. Republika-ABC AustraliaPlus: "Hal yang Perlu Dilakukan agar Kuliah S2 di Luar Negeri", 16 February 2017.
2. DetikNews-ABC AustraliaPlus: "Langkah-Langkah Kuliah ke Luar Negeri: Dari A-Z", 7 June 2016.

3. Republika-ABC AustraliaPlus: "Menentukan Topik Penelitian: Dilema Kecepatan Tamat dan Kualitas Penelitian", 10 May 2016.
4. TribunNews-ABC AustraliaPlus: "Pengalaman Heru Handika Menyikapi Kerja Sama Dengan Peneliti Asing", 8 May 2016.
5. DetikNews-ABC AustraliaPlus: "Jurus Kuliah ke Luar Negeri Berkat Jaringan Pertemanan", 15 April 2016.
6. Republika-ABC AustraliaPlus: "Kiat Meningkatkan TOEFL Melebihi 550", 7 March 2016.
7. DetikNews-ABC AustraliaPlus: "Mengenal LoA dan Cara Mendapatkan 'Surat Sakti' S2/S3 di Luar Negeri", 3 February 2016.
8. Republika-ABC AustraliaPlus: "Bagaimana Menulis Esai Untuk Mendapatkan Beasiswa LPDP", 11 January 2016.

### **OUTREACH**

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| 1. Night at the Museum, LSU Museum of Natural History, USA | 14 November 2019 |
| 2. Night at the Museum, LSU Museum of Natural History, USA | 11 August 2018   |
| 3. Meet the Scientists, Museums Victoria, Australia        | 22 August 2015   |

### **MEMBERSHIPS & SERVICE**

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1. IUCN SSC Small Mammal Specialist Group, 2017-Present
2. The American Society of Mammalogists, 2016-Present
  - Biodiversity Committee (2024-present)
  - Mammal diversity database curation team
3. The Society of Systematic Biologists, 2020-Present
4. KCA-LH Rafflesia Nature Conservation Club, Andalas University, permanent member since 2019
  - Secretary (2011-2012)
  - Training undergraduate student members on jungle survival, land navigation, search and rescue, and tropical forest ecology.
  - Led and participated in mountain and cave expeditions across Sumatra, Indonesia.
  - Led and participated in organizing conservation training and seminars for students, faculties, and the public.
5. Student Association of Indonesian Endowment Fund in Victoria, Australia, 2015-2017