THERYA, 2025, Vol. 16 (1): 1-4 DOI: 10.12933/therya-23-6185 ISSN 2007-3364

Editorial

Keep running your traplines: Celebrating the contributions of Jim and Carol Patton to the science and people of mammalogy

It is with pleasure that we introduce this volume, which honors the many contributions that Jim and Carol Patton have made to the discipline of mammalogy. Their influence extends well beyond the research they have conducted together and includes the profound impact they have had on the careers of researchers from around the world. Although the papers included here represent only a small subset of the students, postdoctoral scholars, and long-term collaborators who have worked with Jim and Carol, the list of contributors and the institutions they represent speak directly to the international scope of the Pattons' influence on the study of mammalian biology. The topics and taxa represented are equally broad and underscore the extent of the Pattons' expertise and the degree to which their mentorship has transcended academic boundaries.

While it was Jim who held a faculty position at U.C. Berkeley and who served and continues to serve as a curator in the Museum of Vertebrate Zoology, he has done it all in partnership with Carol. This includes joint field trips throughout the world, during which Carol worked side by side with Jim to set traps, prepare specimens, and explore mammalian diversity. Carol has also been a fundamental contributor to mentoring students and postdoctoral scholars and to organizing field trips for Berkeley's undergraduate class in mammalogy. Together, Jim and Carol have attended the annual meetings of the American Society of Mammalogists for more than 50 years, including (reportedly) while on their honeymoon. In short, it simply is not possible to celebrate Jim's career without also celebrating Carol and thus this volume is dedicated to both of them.

Gophers, genetics, and the Juruá: the pre-retirement era. Jim joined the faculty at U.C. Berkeley in 1969 (Figure 1). Over the next 30 years, Jim redefined our understanding of mammalian evolution by linking patterns of diversity and evolutionary relationships to organismal ecology in ways that had not been done previously. Central themes

Figure 1. Jim Patton writing field notes in Peru while wearing local, traditional face markings. Photo taken in 1968 just prior to Jim beginning his faculty position at U.C. Berkeley. Photo: Museum of Vertebrate Zoology Archives.

to his research included: 1) the causes and consequences of chromosomal evolution; 2) mechanisms underlying species boundaries in pocket gophers; 3) systematics and biogeography of North and South American rodents; and 4) interactions between ecology and landscape history in shaping the biodiversity of Amazonia. Upon his retirement from faculty responsibilities in 2001, many people gathered at the Museum of Vertebrate Zoology for "Pattonfest," a multi-day celebration of Jim's extraordinary career. The edited volume that grew out of Pattonfest (Lacey and Myers 2005) reflects the conceptual, geographic, and taxonomic breadth of Jim's research career. Notably, the volume contains a comprehensive review of Jim's personal and professional journey prior to 2001 (Robles and Greene 2005) that concludes with his reflections upon retirement, including the statement "I don't know what I will be doing ten years from now."

Grinnell revisited: the post-retirement era. Fast-forward twenty-five years, and Jim and Carol are still running their traplines! Since Jim's retirement, they have continued to document the diversity of western landscapes (Figures 2 and 3) and other regions of the world, and to connect with the people in those places. Their work has continued to expand our understanding of mammalian diversity, ecology and evolution, and to inspire new generations of biologists.

During the first decade of retirement, Jim and Carol spent much of each year in the Sierra Nevada Mountains as part of the Grinnell Resurvey Project. Conceived of by former MVZ Director Craig Moritz, Jim and Carol provided the essential "boots on the ground" effort needed to resurvey the mammals of Yosemite, Lassen, and Sequoia Kings Canyon National Parks a century after Joseph Grinnell and colleagues first characterized the vertebrates of these areas. In addition to generating critical insights into mammalian response to changing conditions, this project effectively launched a new discipline of museum-based research: temporal resurveys of faunal change.

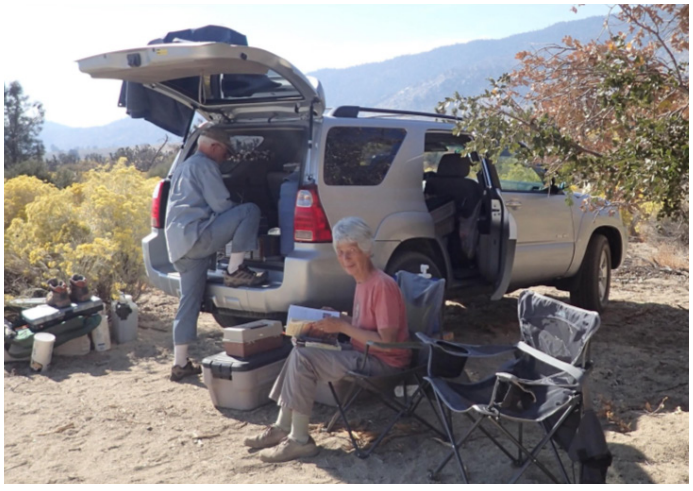

Figure 2. Jim and Carol Patton at Whitney Well, Kelso Valley, California in 2018. Jim is preparing specimens in his field lab while Carol is keying out desert flowers. Photo: Marjorie Matocq.

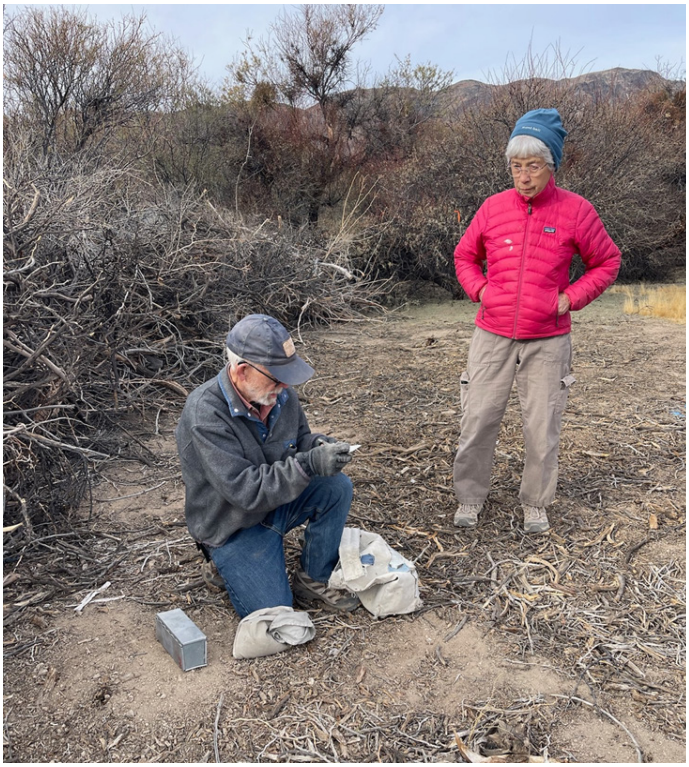

Figure 3. Jim and Carol Patton checking traps near Shoshone, California in December 2025. Photo: Patrick Kelly.

More generally, the post-retirement era has seen a return to Jim's Grinnellian roots. He has undertaken significant taxonomic and phylogenetic revisions of several important lineages of California rodents, notably woodrats (genus *Neotoma*) and pocket mice (genus *Chaetodipus*). At the core of these projects are extensive field surveys of western North America (Figures 2 and 3) – now in their 80's, Jim and Carol still spend a part of each spring and fall trapping rodents. The resulting specimens – prepared with typical Patton perfection (Figure 4) – are being used in numerous ongoing studies of mammalian biology. In all aspects of their work, the Pattons embody the principles, practices, and dedication to natural history espoused by Grinnell (Figure 5).

To put things in more quantitative terms, since his retirement Jim has published more than 100 papers, book chapters, and monographs, as well as a seminal edited volume (Patton *et al.* 2020) on the mammals of South America for which he also co-authored many chapters. During the same period, he has contributed 11,500 specimens to the MVZ, with a lifetime total of more than 30,000 specimens and counting. Although he no longer teaches undergraduate classes, he has co-authored *A Manual of the Mammalia: An Homage to Lawlor's "Handbook of the Orders and Families of Living Mammals"* (Kelt and Patton 2020) a comprehensive, specimen-based lab manual for mammalogy based upon his three decades of teaching this course at Berkeley. This invaluable resource is increasingly viewed as *the* standard reference for teaching mammalogy courses. Jim's legacy as a teacher and mentor continues through two graduate

Figure 4. Jim preparing a specimen in the field in September 2011. Toiyabe Range, Nevada. Photo: Rebecca Rowe.

student awards given annually by the American Society of Mammalogists: the James L. Patton Award and the Carol and Jim Patton Award.

Shortly after retirement, Jim emptied out his faculty office, moving his microscopes, field notes, and most essential books to a nook located within the MVZ collections, where he continues to work while surrounded by specimens. Jim meets regularly with colleagues, museum visitors, and Berkeley students, resulting in a steady stream of foot traffic to his retirement office. Jim continues to generously share his time and encyclopedic knowledge with everyone who comes to him, providing keen insight and stimulating ideas, all while referring to himself as "just a rat trapper".

Honoring the Pattons. The idea for this volume originated with Sergio Ticul Álvarez-Castañeda who, as Editor-in-Chief of *Therya*, initiated the practice of organizing periodic collections of papers in honor of esteemed mammalogists. Ticul recruited Marjorie who then recruited Eileen to help bring the project to fruition. We solicited contributions from some of Jim's past students, postdocs, and long-time collaborators – collectively, these individuals span the full duration of Jim's career. The volume begins with two papers that highlight the continued importance of some of Jim's most profound contributions to the study of mammalian evolution: the role of chromosomal changes in speciation (Moritz and Potter) and the need for multi-dimensional assessments of species boundaries (Nachman). Jim is widely recognized for his use of emerging genetic technologies to study the evolution of mammalian diversity. The next three papers in the volume highlight the application of such approaches to the discovery of cryptic species (Geise *et al.*), to the identification of evolutionary relationships (Lessa and Parada), and to the evaluation of taxonomic units (Álvarez-Castañeda and Segura-Trujillo). The next two papers explore the mechanisms underlying species boundaries by examining interspecific hybridization in tuco-tucos (de Freitas and Ximines) and woodrats (Matocq *et al.*). As evidence of the broad reach of Jim's research, the following three papers highlight the role of small mammals in community ecology including predator-prey dynamics (Kelt *et al.*), host-parasite interactions (Adams *et al.*), and as indicators of ecosystem change over time (Stegner and Hadly). Finally, representing Jim's contributions to mammalian conservation, the last set of papers focus on the threats native mammal populations face in rapidly changing landscapes (Cypher *et al.*) and the critical importance of faunal surveys for monitoring changes in mammalian abundance and diversity over time (Yu *et al.* and Rickart *et al.*).

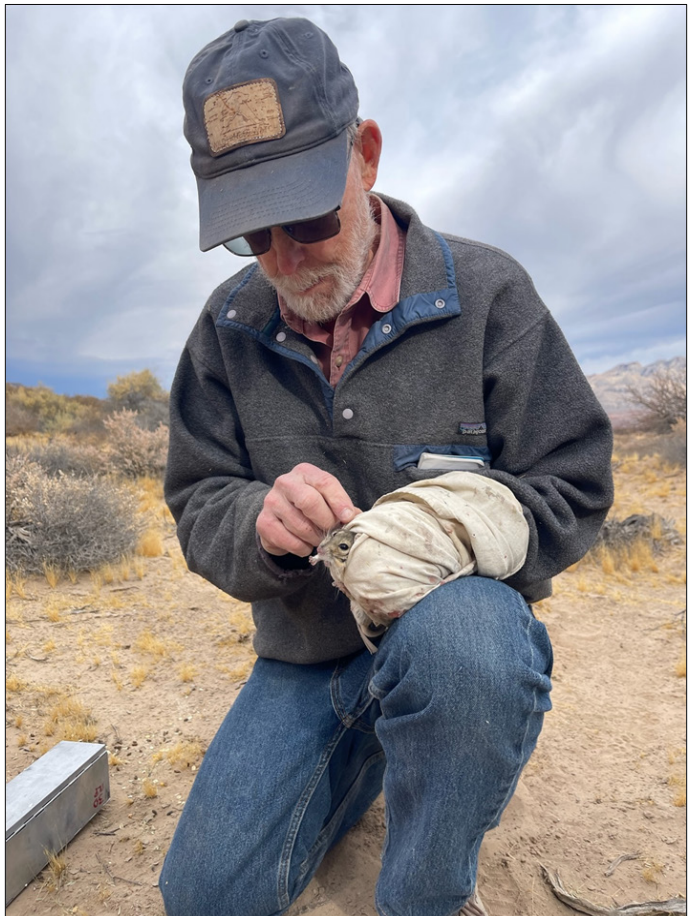

Figure 5. Jim greeting a recently captured woodrat near Shoshone, California in December 2025. This familiarity with organisms and their natural environments is the most fundamental component of evolutionary studies. Photo: Patrick Kelly.

Although no single volume can capture the full scope of the Pattons' impact on mammalogy, our hope is that this compilation of papers will bring renewed attention to a truly remarkable partnership that continues to generate new knowledge, promote forward-looking research on mammals, and inspire new generations of biologists (Figure 6). Many of the papers included here contain heartfelt statements from the authors regarding the ways in which their careers were shaped by Jim and Carol – sentiments that are broadly shared among those who have been influenced by their mentorship and friendship. As two of the many individuals who have benefitted from their advice and encouragement throughout our careers, we wish to express our sincere thanks to Jim and Carol for everything they have done over the years to support the science and people of mammalogy.

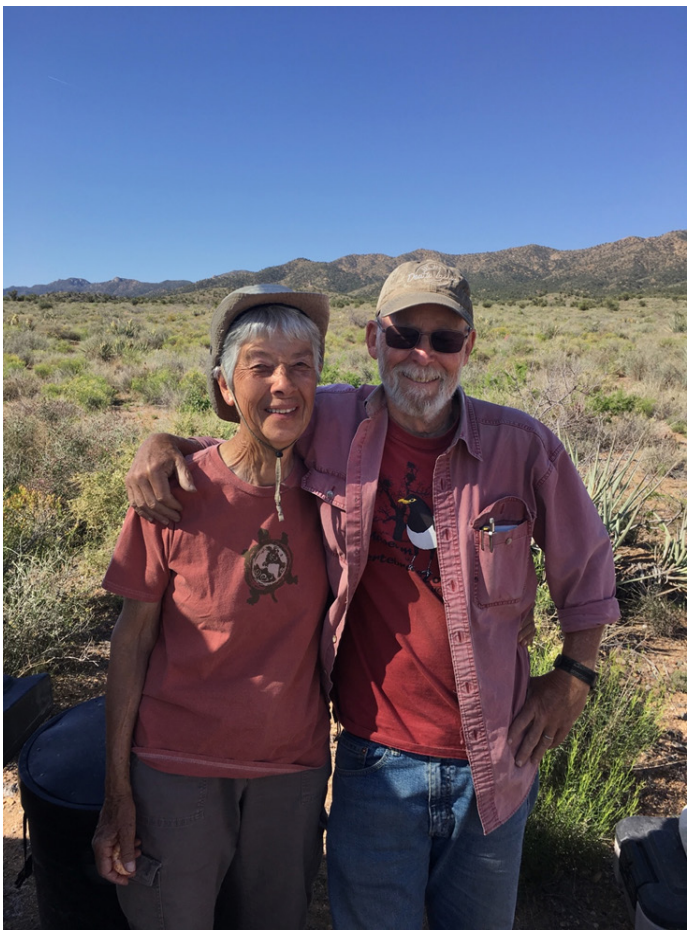

Figure 6. Jim and Carol Patton near Hackberry, Arizona in May 2018. Photo: Duke Rogers.

Acknowledgments

First, thank you to Sergio Ticul Álvarez-Castañeda for initiating this project and to Cintya A. Segura-Trujillo for her support in creating this volume. In addition to the authors themselves, we thank all those who shared their perspectives on Jim and Carol, as well as the many individuals who supported this project and conveyed their appreciation of Jim and Carol by providing expert review of these manuscripts. Thanks to: Kayce Bell, Jessica Blois, Robert Bradley, Chris Conroy, Chris Feldman, Harry Greene, Larry Heaney, Andrew Hope, Fabian Jaksic, Matina Kalcounis-Rüeppel, Jessica Light, Verity Mathis, Phil Myers, George Oliver, Bruce Patterson, Javier Rodríguez-Robles, Duke Rogers, Becca Rowe, Bob Timm, and Nate Upham. Preventing the Pattons from learning about this project until its release was a community effort; the authors are thrilled to finally be able to share these papers with Jim and Carol and look forward to the ensuing discussions!

Marjorie Matocq[1], and Eileen Lacey[2]

[1] Natural Resources and Environmental Science, University of Nevada at Reno. 1664 N. Virginia Street, Reno, NV 89557. USA. E-mail: mmatocq@unr.edu (MM).

[2] Museum of Vertebrate Zoology. University of California. 3101 Valley Life Sciences Building. Berkeley, CA 94720. USA. E-mail: ealacey@berkeley.edu (EL).

Literature cited

Kelt, D. A. and J. L. Patton. 2020. A Manual of the Mammalia: an homage to Lawlor's "Handbook of the Orders and Families of Living Mammals". The University of Chicago Press.

Lacey, E. A., and P. Myers, eds. 2005. Mammalian Diversification: From Chromosomes to Phylogeography. A Celebration of the Career of James L. Patton. University of California Publications in Zoology, volume 133:1-385.

Patton, J. L., U. F. J. Pardiñas, and G. D'Elía, eds. 2015. Mammals of South America. Volume 2: Rodents. The University of Chicago Press.

Rodríguez-Robles, J. A., and H. W. Greene. 2005. Genes, rats, and sinking boats: a biographical perspective on James L. Patton. *In* Mammalian Diversification: From Chromosomes to Phylogeography. A Celebration of the Career of James L. Patton (E. A. Lacey, and P. Myers, eds.). University of California Publications in Zoology, volume 133:5-38.