JOHN "JACK" B. HOPKINS III

Unity College
School of Biodiversity Conservation
90 Quaker Hill Rd.
Unity, ME 04988

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EDUCATION

2011 **Montana State University**, Bozeman, Montana, USA
Ph.D., Fish and Wildlife Biology, Department of Ecology
University of California, Santa Cruz (Fall 2007)

1999 **Denison University**, Granville, Ohio, USA
B.A. Environmental Studies: Wildlife Biology
School for Field Studies, Center for Marine Resource Studies, South Caicos Island, Spring 1998

1995 **Western Reserve Academy,** Hudson, Ohio, USA

RESEARCH POSITIONS

2016- **Unity College**, Unity, Maine, USA
Assistant Professor of Wildlife Biology, School of Biodiversity Conservation

2016- **University of Ljubljana,** Ljubljana, Slovenia
Research Fellow, Biotechnical Faculty, Department of Forestry
Development of a multi-method approach to study wildlife behavior: investigating human-bear Conflicts in contrasting landscapes of Europe; PI: Klemen Jerina

2011- **University of California, Santa Cruz**, Santa Cruz, California, USA
Research Fellow, Department of Ecology & Evolutionary Biology
Stable Isotopes in Ecological Studies; Advisor: Dr. Paul Koch

2016 **University of California, Merced**, Merced, California, USA (April-Aug)
Postdoctoral Scholar, School of Natural Sciences
Food Webs & Stable Isotope Ecology; Advisor: Dr. Justin Yeakel

2015 **University of California, San Diego**, San Diego, California, USA
Postdoctoral Scholar, Division of Biological Sciences
Applied Conservation & Stable Isotope Biogeochemistry; Advisor: Dr. Carolyn Kurle

2013-14 **Peking University**, Beijing, China (50% appointment)
Postdoctoral Research Fellow, School of Life Sciences
Carnivore Ecology at Laohegou Nature Reserve; Advisor: Dr. Dajun Wang

2012-14 **University of Alberta**, Edmonton, Alberta, Canada (50% appointment)
Postdoctoral Research Fellow, Department of Biological Sciences
Grizzly Bear Research and Mitigation Project

2006-11 **Montana State University**, Bozeman, Montana, USA
Graduate Research Assistant, Ecology Department
Dissertation: Use of stable isotopes to investigate black bear diets and to evaluate the human-bear management program at Yosemite National Park, CA

TEACHING POSITIONS

Unity College, Unity, Maine, USA
Assistant Professor of Wildlife Biology, School of Biodiversity Conservation

2017 BI 3273: Mammalogy
2017 WF 1002: Introduction to Wildlife and Fisheries Conservation
2017 WF 3893: Wildlife Capture and Chemical Immobilization
2017 UC 4501: Carnivore Research and Management
2016-17 WF 2433: Wildlife Techniques
2016 WF 1003: North American Wildlife Lab

Mercyhurst University, North East, PA, USA
Adjunct Professor, Biology Department

2016 BIO 146, 147: Ecology and Evolutionary Biology & Lab

Montana State University, Bozeman, Montana, USA
Graduate Teaching Assistant, Ecology Department

2009 BIOL 215: Organisms to Populations (Ecology and Evolution)
2009 BIOL 101: Organismal Biology
2006, 08 BIOL 103: Environmental Science and Society

PAST EMPLOYMENT

2004-07 **National Park Service**, Yosemite National Park, California, USA
Biological Science Technician, Resource Management Division, Wildlife Management

- Led and trained staff in capturing, immobilizing, and handling black bears & other wildlife
- Monitored bears using radio-telemetry; hazed bears using various deterrents administered via shotgun (e.g., bean-bag rounds, rubber bullets, noisemakers); trained dozens of staff annually in mitigating human-bear conflict throughout the park
- Educated hundreds of people annually about black bear ecology, food storage, and safety
- Designed and carried out an aversive conditioning research project

2001-04 **National Park Service**, Virgin Islands National Park, St. John, U.S. Virgin Islands
Biological Science Technician, Resource Management Division

- Led and trained staff in data collection efforts of declining coral, pelican, and turtle species
- Led and trained the Buoy Management Team; maintained >250 floating objects in the Park
- Educated the public about endangered species ecology and marine resource management
- Assisted in feral (pigs, goats, cats) and exotic (rats, mongoose) animal reductions

2000 **US Geological Survey**, Glacier National Park, West Glacier, Montana, USA
Biological Science Technician (seasonal), Greater Glacier Bear DNA Project

- Led and trained staff in data collection to estimate grizzly population size
- Collected biological data related to black bear and lynx populations

1997-99,09 **US Forest Service**, Gallatin National Forest, Gardiner, Montana, USA
Forestry Technician (seasonal), Absaroka-Beartooth Wilderness

- Led and trained staff in data collection related to black and grizzly bear habitat selection, foraging behaviors, and distribution in relationship to human activity in the backcountry
- Assisted biologists/ecologists throughout the GYE studying moose, elk, antelope, bison, bighorn sheep, mountain lion, lynx, wolverine, pine martin, fisher, and beaver
- Educated the public on wilderness patrols (e.g., low impact camping, safety in grizzly country, food-storage regulations) and conducted campsite inventories
- Led and trained field crews in maintaining 300-mile trail system and building trail structures

GRANTS (USD)

2016-2019 Development of a multi-method approach to study wildlife behavior: investigating human-bear conflicts in the contrasting landscapes of Europe, ~**$320,000**

2017 Predicting the diets & health of black bears in Maine using stable isotope analysis, Unity College, Nicholas Holt Challenge Scholarship & 2 SAEF award – M. Jackson, **$2,768**

2017 Genetic and isotopic sampling of fisher, Unity College, **$560**; 2 SAEF awards – B. Slack, **$730**

2017 Black bear home range and habitat use in ME, Unity College, 2 SAEF award – C. Davis, **$1,000**

2017 Estimating isotopic discrimination factors for omnivores, Unity College Faculty Grant, **$1,300**

2015 Quantifying whitebark pine in the diets of grizzly bears, U.S. Forest Service, **$2,500**

2012-2014 Grizzly bear research and mitigation project, Canadian Pacific & Natural Science and Engineering Research Council of Canada, ~**$1,208,000**

2014 Carnivore Ecology at Laohegou Nature Reserve, The Nature Conservancy China, ~**$66,750**

2013 Carnivore Ecology at Laohegou Nature Reserve, The Nature Conservancy China, ~**$27,050**

2012-2013 Sparrow phenology project, U.S. Fish and Wildlife Service, **$46,000**

2010 Stable isotopes in the vibrissae of Weddell seals, R. Garrott, Montana State University, **$850**

2006-2009 Use of genetics and stable isotopes in monitoring and management of black bears in Yosemite National Park, CA. Yosemite National Park, Bear Council Grant, **$73,120**

PEER-REVIEWED PUBLICATIONS

Google Scholar: https://scholar.google.com/citations?user=HQ5BYH4AAAAJ&hl=en
Student mentored by Hopkins denoted in italics
†Hopkins contributed equally to writing the ms with the first author

In review Ferguson, J.M., J.B. Hopkins III, & Briana H. Witteveen. Integrating population abundance and diet data to improve inferences on food web dynamics. **Methods in Ecology and Evolution**.

2017 Hopkins, J.B. III, J.M. Ferguson, D. Tyers, & C.M. Kurle. Selecting the best stable isotope mixing model to estimate grizzly bear diets in the Greater Yellowstone Ecosystem. **PLoS ONE** 12(5): e0174903.

2017 Murray, M., S. Fassina, J.B. Hopkins III, J. Whittington, & C.C. St. Clair. Seasonal and individual variation in the use of rail-associated food attractants by grizzly bears (*Ursus arctos*) in a national park. **PLoS ONE** 12(5):e0175658.

2016 *Bu, H.*, †J.B. Hopkins III, D. Zhang, S. Li, R. Wang, M. Yao, and D. Wang. 2016. An evaluation of hair-snaring devices for small-bodied carnivores in Southwest China. **Journal of Mammalogy** 97:589–598.

2015 Hopkins, J.B. III, & C.M. Kurle. Measuring the realized niches of animals using stable isotopes: from rats to bears. **Methods in Ecology and Evolution** 7:210–221.

2015 Galetti, M., R. Guevara, C.L. Neves, R.R. Rodarte, M. Moreira, J.B. Hopkins III & J.D. Yeakel. Defaunation affects the populations and diets of rodents in Neotropical rainforests. **Biological Conservation** 190:2–7.

2014 Hopkins, J.B. III, P.L. Koch, J.M. Ferguson, & S.T. Kalinowski. The changing anthropogenic diets of American black bears over the past century in Yosemite National Park. **Frontiers in Ecology and the Environment** 12:107–114 (+ cover). >50 articles published in national and international newspapers, magazines, and other media, including L.A. Times, Washington Post, NPR, NBC News, Fox News, and The Economist. Altmetric score: 100

2014 Hopkins, J.B. III, J. Whittington, A.P. Clevenger, M.A. Sawaya, & C.C. St. Clair. Stable isotopes reveal railway-associated behaviour in a threatened carnivore. **Isotopes in Environmental and Health Studies** 50:322–331. (Special issue: Applications of stable isotope analysis in mammalian ecology)

2014 Karamanlidis, A.A., J.P. Curtis, A.C. Hirons, M. Psaradellis, P. Dendrinos, & †J.B. Hopkins III. Stable isotopes confirm the coastal diet of critically endangered Mediterranean monk seals. **Isotopes in Environmental and Health Studies** 50:332–342. (Special issue)

2014 Walter, W.D., C.M. Kurle & †J.B. Hopkins III. Applications of stable isotope analysis in mammalian ecology. **Isotopes in Environmental and Health Studies** 50:287-290. †All authors contributed equally. (Special issue)

2013 Hopkins, J.B. III. Use of genetics to investigate socially learned foraging behavior in free-ranging American black bears. **Journal of Mammalogy** 94:1214–1222.

2013 Hopkins, J.B. III, & S.T. Kalinowski. The fate of transported American black bears in Yosemite National Park. **Ursus** 24:120–126 (+ cover art).

2013 Hopkins, J.B. III, Cutting, K.A., & J.M. Warren. Use of stable isotopes to investigate keratin deposition in claws tips of ducks. **PLoS ONE** 8(11):e81026.doi:10.1371/journal.pone.0081026

2012 Aryal, A., †J.B. Hopkins III, D. Raubenheimer, J. Weihong, & D. Brunton. Distribution and diet of brown bears in the upper Mustang Region, Nepal. **Ursus** 23:231-236.

2012 Hopkins, J.B. III, P.L. Koch, C.C. Schwartz, J.M. Ferguson, S.S. Greenleaf, & S.T. Kalinowski. Stable isotopes to detect food-conditioned bears and evaluate human-bear management. **Journal of Wildlife Management** 76:703–713.

2012 Hopkins, J.B. III, & J.M. Ferguson. Estimating the diets of animals using stable isotopes and a comprehensive Bayesian mixing model. **PLoS ONE** 7: e28478.doi:10.1371/journal.pone.0028478

2010 Hopkins, J.B. III, S. Herrero, R.T. Shideler, K.A. Gunther, C.C. Schwartz, & S.T. Kalinowski. A proposed lexicon of terms and concepts for human-bear management in North America. **Ursus** 21:154-168.

2010 Aryal, A., S. Gastaur, S. Menzel, T.B. Chhetri, & †J. Hopkins. Estimation of blue sheep population parameters in the Dhorpatan Hunting Reserve, Nepal. **International Journal of Biodiversity and Conservation** 2:51-55.

AWARDS

2015 National Institute for Mathematical and Biological Synthesis (NIMBioS), Travel Grant, $1,500 (http://www.nimbios.org/personnel/visitors2015)
2012 International Association for Bear Research & Management (IBA), Travel Grant, $375
2011 IBA, Experience & Exchange Grant, $1,500
2010 NACRES Travel Grant, 1,165€
2010 Montana State University, Letters and Science Travel Grant, $1,000
2009 Kenneth D. Lorang Memorial Award, Montana State University, Dept of Ecology, $250
2009 University of California, Santa Cruz, Travel Grant, $500
2009 Montana State University, Graduate Travel Grant, $300
2004 Excellence in Service, Yosemite National Park, $1,500
2002 On-the-Spot Award, Virgin Islands National Park, $500
1997 Wilderness Excellence Award, Gallatin National Forest

SOFTWARE & REPORTS

2015 J.M. Ferguson and J. Hopkins. IsotopeR: User guide and webpage for version 0.5.1 http://CRAN.R-project.org/package=IsotopeR.

2013 J.M. Ferguson and J. Hopkins. IsotopeR: Stable isotope analysis. R package version 0.4.7. http://CRAN.R-project.org/package=IsotopeR.

2013 Hopkins, J.B. III, & S.T. Kalinowski. Ecology, behavior, and management of human food-conditioned black bears in Yosemite National Park. Final Report, National Park Service, Yosemite National Park. pp. 113.

2012 Hopkins, J.B. III. An Experience and Exchange in Nepal, International Bear News 21:54–55.

2012 Hopkins, J.B. III. Noninvasive sampling of carnivores in Laohegou Nature Reserve. Final Report to Peking University and The Nature Conservancy, China. pp. 7.

INVITED PRESENTATIONS

2017 Hopkins, J.B. III. Stable isotopes to investigate the dietary responses of bears to a changing environment. University of Maine, Orono, Maine.

2017 Hopkins, J.B. III. Bears, humans, and habituation. Science on Screen. Railroad Square Cinema, Waterville, Maine.

2017 Hopkins, J.B. III. Using stable isotopes to estimate the diets of grizzly bears in the Greater Yellowstone Ecosystem. Fishbowl, Unity College, Unity, Maine.

2016 Hopkins, J.B. III. Use of stable isotopes to investigate the dietary responses of bears to a changing environment. Marshall University, Huntington, West Virginia.

2016 Hopkins, J.B. III. Stable isotopes to detect dietary specialization and to assess the risk of human-induced wildlife mortality. Unity College, Unity, Maine.

2015 Hopkins, J.B. III. Use of stable isotopes analysis in applied wildlife ecology. National Institute for Mathematical and Biological Synthesis (NIMBioS), University of Tennessee, Knoxville, TN.

2014 Hopkins, J.B. III. Stable isotopes to investigate the diets of bears. Chair, "Bear foraging ecology" session. International Association for Bear Research and Management, Thessaloniki, Greece.

2014 Hopkins, J.B. III, P.L. Koch, C.C. Schwartz, J.M. Ferguson, & S.T. Kalinowski. Use of genetics and stable isotopes to investigate the foraging behavior of American black bears and to evaluate human-bear management in Yosemite National Park, California.
- University of Ljubljana, Dept. of Forestry & Renewable Forest Resources, Ljubljana, Slovenia.
- Peking University, School of Life Sciences, Beijing, China.
- The Ohio State University, Dept. of Evolution, Ecology & Organismal Biology, Columbus, OH.
- Eastern Kentucky University, Dept. of Biological Sciences, Richmond, Kentucky.

2013 Hopkins, J.B. III, P.L. Koch, C.C. Schwartz, J.M. Ferguson, & S.T. Kalinowski. Use of stable isotopes to investigate the foraging behavior of American black bears in Yosemite National Park.
- USGS Alaska Science Center, Anchorage, Alaska.
- Kodiak National Wildlife Refuge, Kodiak Island, Alaska.
- University of Kentucky, Department of Forestry, Lexington, Kentucky.
- University of Wisconsin, Department of Forest and Wildlife Ecology, Madison, Wisconsin.

2012 Hopkins, J.B. III. The acquisition of human food-conditioned foraging behavior in black bears. Peking University, School of Life Sciences, Beijing, China.

2012 Hopkins, J.B. III. Noninvasive genetic sampling for carnivore ecology.
- Peking University, School of Life Sciences, Beijing, China.
- Laohegou Nature Reserve, Sichuan Province, China.

2011 Hopkins, J.B. III, P.L. Koch, C.C. Schwartz, J.M. Ferguson, & S.T. Kalinowski. Stable isotopes to detect human food-conditioned bears and to evaluate a century of human-bear management.
- Red Rock Lakes National Wildlife Refuge, Montana.
- Yosemite Forum, Yosemite National Park, California.
- Institute of Forestry, Kathmandu, Nepal.
- Conservation International, Chengdu, China.
- The Nature Conservancy, Beijing, China.
- Peking University, School of Life Sciences, Beijing, China.
- University of Florida, Department of Biology, Gainesville, Florida.

ABSTRACTS

2017 Hopkins, J.B. III, J.M. Ferguson, D. Tyers, & C.M. Kurle. Selecting the best stable isotope mixing model to estimate grizzly bear diets in the Greater Yellowstone Ecosystem. International Association for Bear Research and Management, Quito, Ecuador (oral).

2016 Hopkins, J.B. III, J.M. Ferguson, D. Tyers, & C.M. Kurle. A framework for testing competing stable isotope mixing models. IsoEcol. Tokyo, Japan (oral).

2014 Hopkins, J.B. III, J. Whittington, T. Clevenger, M. Sawaya, & C.C. St. Clair. Stable isotopes reveal railway-associated behaviour in a threatened carnivore. International Association for Bear Research and Management, Thessaloniki, Greece (poster).

2013 Hopkins, J.B. III. Use of stable isotopes to investigate the foraging behavior of American black bears in Yosemite National Park (Parts I & II). International Association for Bear Research and Management, Provo, Utah (oral).

2013 Hopkins, J.B. III, P.L. Koch, C.C. Schwartz, J.M. Ferguson, & S.T. Kalinowski. Use of stable isotopes to estimate the dietary responses of black bears to changing management regimes in Yosemite National Park. Ecological Society of America, Minneapolis, Minnesota (oral).

2012 Hopkins, J.B. III. The acquisition of human food-conditioned foraging behavior in black bears. International Association for Bear Research and Management, New Delhi, India (oral).

Hopkins, J.B. III, P.L. Koch, C.C. Schwartz, J.M. Ferguson, S.S. Greenleaf, & S.T. Kalinowski. Stable isotopes to detect food-conditioned bears and to evaluate human-bear management.
2012 International Association for Bear Research and Management, New Delhi, India (oral).
2010 International Association for Bear Research and Management, Tsibili, Georgia (oral).
2009 Carnivore Conference, Denver, Colorado (oral).

Hopkins, J.B. III, S. Herrero, R.T. Shideler, K.A. Gunther, C.C. Schwartz, & S.T. Kalinowski. A proposed lexicon of terms and concepts for human-bear management in North America.
2012 International Association for Bear Research and Management, Tsibili, Georgia (poster).
2009 Western Black Bear Workshop, Reno, Nevada (poster).

Hopkins, J.B. III, S. Lisius, V. Seher, S. Breck, and N. Lance. 2006. Evaluation of aversive conditioning treatment to manage black bears in Yosemite National Park.

2009 The Wildlife Society, Western Section, Sacramento, California (poster).

2007 The Wildlife Society, Western Section, Monterey, California (poster).

2006 9th Western Black Bear Conference, Raton, New Mexico (poster).

SELECTED MEDIA

2017 **Bangor Daily News**. Unity College faculty research measures impact of climate change on threatened Yellowstone grizzlies. 9 June. http://bangordailynews.com/community/unity-college-faculty-research-measures-impact-of-climate-change-on-threatened-yellowstone-grizzlies/

2017 **The Wildlife Society**. Hairs show grizzlies prefer declining tree species. 30 May. http://wildlife.org/hairs-show-grizzlies-prefer-for-declining-tree-species/

2017 **E&E News** – Climatewire. Grizzlies' favorite food is slowly disappearing. 17 May. https://www.eenews.net/climatewire/2017/05/17/stories/1060054647

2017 **Times of San Diego**. Climate change forcing Yellowstone's threatened grizzly bears to change diet. 14 May. https://timesofsandiego.com/tech/2017/05/14/ucsd-climate-change-forcing-yellowstones-threatened-grizzly-bears-change-diet/

2017 **Phys Org**. Measuring the impact of a changing climate on threatened Yellowstone grizzly bears. 11 May. https://phys.org/news/2017-05-impact-climate-threatened-yellowstone-grizzly.html

2015 **United Airlines** - Hemispheres. Staying Wild. Dec 2015. http://www.unitedmags.com/inside-yosemites-effort-to-save-the-black-bear

2015 **Science Daily**. Black bears in Yosemite forage primarily on plants and nuts. 24 August. https://www.sciencedaily.com/releases/2015/08/150824130450.htm

2015 **The Wildlife Society**. What do Yosemite Bears and Aleutian Rats have in Common. 26 August. http://wildlife.org/what-do-yosemite-bears-and-aleutian-rats-have-in-common/

2014 **L.A. Times**. Yosemite bears eating like it's 1915. 4 March. http://www.latimes.com/science/sciencenow/la-sci-sn-yosemite-bear-diet-20140304-story.html

2014 **CBS News**. Yosemite outsmarts its food-stealing bears. 4 March. https://www.cbsnews.com/news/yosemite-outsmarts-its-food-stealing-bears/

2014 **NPR**. How Yosemite Keeps Its Bears' Paws Off Campers' Hamburgers. 6 March. http://www.npr.org/sections/thesalt/2014/03/06/285793709/how-yosemite-keeps-its-bears-paws-off-campers-hamburgers

2014 **The Economist**. Ecology: No more teddy bear picnics. 11 March. http://www.economist.com/blogs/babbage/2014/03/ecology

2014 **California Academy of Sciences**. Yosemite Bears' Changing Diets. 10 March. https://www.calacademy.org/explore-science/yosemite-bears%E2%80%99-changing-diets

2013 **Environment 360**. Molecular Detective Work Yields Big Gains for Ecology. 8 July. http://e360.yale.edu/features/stable_istope_analysis_yields_big_gains_for_ecology

PROFESSIONAL & ACADEMIC SERVICE

Associate Editor, Journal of Mammalogy; manage ~10 peer-reviewed articles per year, 2017-2020

Technical Reviewer: Animal Biotelemetry Editorial, Biological Conservation, Biota Neotropica, BMC Research Notes, Canadian Journal of Zoology, Ecosphere, European Journal of Wildlife Research, Journal of Animal Ecology, Journal of Mammalogy, Isotopes in Environmental & Health Studies, International Association for Bear Research and Management (abstracts for IBA conference), Journal of Fish and Wildlife Management, Journal of Wildlife Management, Marine Mammal Science, Marine Ecology Progress Series, Methods in Ecology and Evolution, National Science Foundation, New Zealand Journal of Zoology, Oecologia, PLoS ONE, Scientific Reports, Sustainability, Turkish Journal of Zoology, Ursus, Wildlife Research

Society Member: The American Society of Mammalogists; Ecological Society of America; The Wildlife Society; International Association for Bear Research & Management

Graduate mentor: Primary mentor of 2 PhD students and 1 MS student

- Hongliang Bu, Ph.D. (graduated spring 2016), School of Life Sciences, Peking University, Beijing, China; Temporal segregation and spatial interactions among mesocarnivores in the Minshan Mountains, China
- Jernej Javornik, Ph.D. Candidate (spring 2020), School of Forestry, University of Ljubljana, Slovenia; Using stable isotopes to investigate Brown bear foraging ecology in Slovenia
- Jeff White, M.S. Biology (spring 2017), Marshall University, Huntington, West Virginia; Foraging strategy plasticity in Fiordland Crested Penguins (*Eudyptes pachyrhynchus)*: An isotopic approach

Undergraduate mentor: Primary mentor of 4 undergraduate seniors at Unity College (theses)

- Melanie Jackson; Predicting the health of American black bears in Maine using stable isotope analysis
- Stephen Arsenault; Validating white-tail deer habitat use in Maine
- Bethany Slack; Detecting fisher presence using hair-snares and remote cameras in Maine
- Emily Higgins; Habitat use of black bears in Maine

Undergraduate advisor: Provides academic guidance to 20 undergraduate students

Unity College committee member: Internship Committee, 2017; Plant Bio Faculty Search Committee, 2017; Research Track Committee, 2017

Coordinator: Sustainability Committee for Montana State University, Spring 2009

NOTABLE CERTIFICATIONS, TRAININGS, & SKILLS

Wilderness First Responder, 2000-2010
Open, Advanced, and Rescue SCUBA certifications, >1,000 logged dives, 1995-2003
U.S. Coast Guard captain's license (OUPV), 2003-2008
Wildlife handling and immobilization training, 2004, 2005, 2017
Specialist in wildlife sampling and monitoring via hair-snares, remote cameras, sign survey, and radio-telemetry
Proficient in Programs PRESENCE, MARK, ArcMap, & a variety of frequentist and Bayesian statistics in R
Avid in: backpacking, canoeing, cycling, fishing, grateful dead, hot sauce, hunting, Mexican food, non-fiction, SCUBA, skiing, soccer