

Ryan Lumen

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RESEARCH INTERESTS:

- Insect biodiversity, ecology, systematics, and natural history
- Museum curation and extension
- Insect conservation

EDUCATION:

- B.A., **Major** Biology, **Minor** Natural History, University of Minnesota Duluth (2015)
- M.Sc. Biology, Northern Arizona University (2019)

CURRENT POSITION:

- Lab Technician, Smith Lab, Entomology, Purdue University (January 2020 – Current)

GRADUATE COURSEWORK:

- Practical Computing in Biology, Biology 698, Northern Arizona University (2018)
- Plant-Insect Interactions Seminar, Biology 698, Northern Arizona University (2017)
- Evolutionary Biology Seminar, Biology 698, Northern Arizona University (2017)
- Advanced Entomology, Biology 697, Northern Arizona University (2017)
- Biogeography, Biology 663, Northern Arizona University (2017)
- Phylogenetics, Biology 599, Northern Arizona University (2017)
- Internship in College Teaching, Biology 795, Northern Arizona University (2016 – 2017)
- Field Ecology, Biology 573, Northern Arizona University (2016)
- Teaching and Learning in the Life Sciences, BIOL 5001, University of Minnesota Duluth (2014)

AWARDS AND HONORS:

- Coleopterist's Society: Ross Taylor Bell and Joyce Rockenbach Bell Research Grant (2020)
Funding Award \$6,000
- Coleopterist's Society: J.G. Edwards Prize for published paper based upon a Master's Thesis
- Natural History Museum of Los Angeles County Student Collections Study Award (2017)
Funding Award \$820
- Northern Arizona University Graduate Student Government Travel Award (2017)
Funding Award \$420
- Undergraduate Research Opportunity Program (UROP) (2014)
Funding Award \$3000

- Outstanding Undergraduate Teaching Assistant, University of Minnesota Duluth (2013 – 2014)

TEACHING AND SERVICE EXPERIENCE:

- Graduate Teaching Assistant, Unity of Life II – Biology 182 lab, Northern Arizona University (Fall 2016 – Spring 2018 and Spring 2019)
- Mentor, Honors Entomology – Biology 322 Lab, Northern Arizona University (Fall 2018)
- Graduate Teaching Assistant, Entomology – Entomology – Biology 322 Lab, Northern Arizona University (Fall 2018)
- Presenter, Arizona Insect Festival, University of Arizona, Tucson, AZ (2017 & 2018)
- Aquatic Macroinvertebrate Instructor, Verde Valley’s NRCO “Top Ten Unwanted: Invasives” 7th grade field trips to Montezuma Well, AZ (2016 & 2017)
- Volunteer, Northern Arizona University Science & Engineering Day with the Colorado Plateau Museum of Arthropod Biodiversity (2016 & 2017)
- Volunteer, University of Minnesota Duluth Insect Collection (2013 – 2016)
- Participant, Survey of Tettegouche State Park Odonata, Minnesota Dragonfly Society Annual Meeting, MN (2015)
- Participant, Lake Superior National Estuarine Research Reserve, “Borer Blitz” survey, Superior, WI (2015)
- Speaker, Minnesota Moth Night Education, Soudan Underground Mine State Park (2014)
- President and Co-Founder, The Entomology Club at University of Minnesota Duluth (2013 – 2015)
- Undergraduate Teaching Assistant, Entomology – Biology 4781, University of Minnesota Duluth (Fall 2013 & Fall 2014)
- Speaker and presenter, Entomology Spotlight, Duluth Children’s Museum (2013 & 2014)
- Participant, Lake Vermillion State Park, Minnesota Bioblitz Event (2013)

RESEARCH AND FIELD EXPERIENCE:

- Revision of the genus *Ulus* and phylogenetic analyses of the subtribal classification of tribe Opatrini (Coleoptera: Tenebrionidae). *Master’s thesis* (2016—2019)
 - Utilizing morphology of preserved specimens to infer species limits of *Ulus*
 - Utilizing molecular data to infer phylogeny of the tribe Opatrini to test subtribal classification based on morphology
 - Train an undergraduate volunteer and mentee to assist with the project. Responsibilities included: Databasing specimens, helping to sort/score morphology of *Ulus* specimens, and assisting in preparation of the final manuscript for publication
- Undergraduate Research Opportunities Program (UROP) project, University of Minnesota Duluth, A survey of lady beetles (Coleoptera: Coccinellidae) and true bugs (Hemiptera) on Minnesota Point (2014 – 2015)
- Internship, Museum Insect Collection of the University of Minnesota Duluth (2013 – 2015)
 - Sorting and identifying insects (primarily Hemiptera) in the collection
 - Integrating student collections into the museum collection

- Data entry for specimens
- Internship, Envirosience, inc. (2013)
 - Sorting, counting, and rearing of all life stages of milfoil weevil (*Euhrychiopsis lecontei*) for control of Eurasian milfoil
- Field Assistant, Minnesota Dragonfly Society, Dragonfly (Odonata) surveys in Jay Cooke State Park, MN (2013)
- Field Assistant, Ground Beetle (Coleoptera: Carabidae) surveys in Lake Vermillion State Park, MN (2013)
 - Setting and dismantling pitfall traps
 - Specimen sorting, preparation, preservation, identification, and database entry for induction to the University of Minnesota Duluth museum insect collection

MENTORSHIP:

- Jazlee Crowley – Revision of the genus *Ulus* (Coleoptera: Tenebrionidae) (2017-2019)
 - Training as a volunteer to database specimens, as well as writing taxonomic descriptions, culminating in coauthorship of the published manuscript.
 - Honors Entomology: Training to sort and score beetles using morphology as well as identify and sort other insects to order and family
- Smith Lab, Molecular Methodology and SOPs (2016 – 2019)
 - Responsible for training graduate and undergraduate students in techniques to extract, store, and process molecular samples from insect specimens
- Smith Lab, Phylogenetic Methods (2017 – 2019)
 - Trained and mentored graduate and undergraduate students in phylogenetic methods, software, and analyses

PROFESSIONAL TRAINING:

- Smith Lab, Molecular Methodology and SOPs (2016 – 2019)
 - Techniques to extract, store, and process molecular samples from insect specimens
- Smith Lab, Phylogenetic Methods (2017 – 2019)
 - Phylogenetic methods, software, and analyses
- Trainee, Minnesota Master Naturalist Volunteer training (2015)
- Volunteer, Lake Superior National Estuarine Research Reserve, Emerald Ash Borer identification and recognition workshop, Superior, WI (2015)
- Trainee, Spider workshop, Boulder Environmental Learning Center, Minnesota (2013)
 - Training for identification and appreciation of Arachnids and their natural history
- Trainee, Odonata nymph workshop, Minnesota Dragonfly Society, Minnesota (2013)
 - Identification and preservation of Odonata nymphs and their exuviae

PROFESSIONAL AFFILIATIONS AND CONFERENCES ATTENDED:

- Member, Entomological Collections Network (2016 – Current)
 - Attended conference in Orlando, FL (2016)
 - Attended conference in Denver, CO (2017)
- The Coleopterist Society (2016 – Current)

- Member, Entomological Society of America (2013 – Current)
 - Attended North Central Branch conference in Des Moines, Iowa (2014)
 - Attended and presented at the ESA national conference in Minneapolis, MN (2015)
 - Attended the International Congress of Entomology (ICE) in Orlando, FL (2016)
 - Attended and presented at the ESA national conference in Denver, CO (2017)

PRESENTATIONS:

- Preliminary phylogeny of Blapstinina (Tenebrionidae: Opatrini) and the revision of *Ulus*, **Ryan Lumen**, Kojun Kanda, Marcin Kaminski, and Aaron D. Smith, Northern Arizona University – Tenebrionoidea symposium – ESA national conference, Denver, CO (2017)
- First Detection of *Banasa euchlora* in Minnesota, **Ryan Lumen** – 3-minute oral presentation competition – ESA national conference, Minneapolis, MN (2015)
- Relative abundance changes in Minnesota Point coccinellid aggregations, **Ryan Lumen** and Rachel MaKarrall, University of Minnesota, Duluth – Student Poster Competition – ESA national conference, Minneapolis, MN (2015)

COLLECTIONS VISITED:

- California Academy of Science (CASC)
- University of California – Riverside (UCRC)
- University of California – Davis (UCDC)
- California Department of Agriculture Insect Collection (CDFA)
- University of Minnesota – St. Paul (UMSP)
- University of Arizona (UAIC)
- University of Arizona (ASUHC)
- Northern Arizona University (NAUF)
- Museum of Northern Arizona Insect Collection
- Denver Museum of Nature & Science (DMNS)
- Florida State Collection of Arthropods (FSCA)
- Chicago Field Museum of Natural History (FMNH)
- Purdue University Entomological Research Collection (PERC)

PUBLICATIONS:

- Kaminski M.J., **Lumen R.**, Kanda K., Iwan D., Johnston M.A., Kergoat G.J., Bouchard P., Bai X.L., Li X.M., Ren G.D., and Smith A.D.. 2020. Reevaluation of Blapimorpha and Opatrinae: Addressing a major phylogeny-classification gap in darkling beetles (Coleoptera: Tenebrionidae: Blaptinae). *Systematic Entomology*. DOI: 10.1111/syen.12453
- **Lumen R.**, Kaminski M.J., Crowley J., and Smith A.D.. 2019. Revision of the genus *Ulus* Horn, 1870 (Coleoptera: Tenebrionidae: Opatrini: Blapstinina). *Annales Zoologici* 69(4): 827-856.
- **Lumen R.**, Kanda K., Iwan, D., Smith A.D., Kaminski M.. 2019. Molecular insights into the phylogeny of Blapstinina (Coleoptera: Tenebrionidae: Opatrini). *Systematic Entomology*. DOI: 10.1111/syen.12398.

- Kaminski M.J., Kanda K., **Lumen R.**, Ulmer J.M., C. Wirth, Bouchard P., Aalbu R., Mal N., Smith A.D.. 2019. Catalog of the tribe Sepidiini Eschscholtz, 1829 (Tenebrionidae: Pimeliinae) of the world *Zookeys* 844: 1-121.
- Kaminski M. J., **Lumen R.**, Kanda K., Kubicz M., Iwan D.. 2019. Immature stages of beetles representing the ‘Opatrinoid’ clade (Coleoptera: Tenebrionidae): an overview of current knowledge of the larval morphology *Zoomorphology* 38: 349–370.
- Kanda, K., Smith A. D., Navarette P., Sanchez L., Kaminski M.J., **Lumen R.**, Wirth C., Smith A.L., Maddison D. R.. Molecular phylogeny of Tenebrionidae inferred from four nuclear genes (in prep).
- Kaminski, M.J., Kanda K., **Lumen R.**, Smith A. D., Iwan D.. 2018. Molecular phylogeny of Pedinini (Coleoptera: Tenebrionidae) and its implications for higher-level classification. *Zoological Journal of the Linnean Society* XX: 1-21.
- Steffens, W.P., **Lumen R.P.**. 2015. Decline in relative abundance of *Hippodamia convergens* (Coleoptera: Coccinellidae) in fall shoreline aggregations on western Lake Superior. *The Great Lakes Entomologist* 48: 159-162.