

**CURRICULUM VITAE****DARREN REBAR****Current Address**

Department of Biological Sciences  
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**Professional appointments**

- Aug 2017 – present**      **Assistant Professor of Biology**, Emporia State University
- Oct 2015 – July 2017**      **Postdoctoral Research Associate**, University of Cambridge  
 Advisor: Rebecca M Kilner
- Jan 2014 – Oct 2015**      **Fondation Fyssen Postdoctoral Fellow**, IRBI  
 Advisor: Michael D Greenfield

**Education**

- 2009 – 2013**      **Ph.D., University of Wisconsin-Milwaukee**  
 Program: Ecology, Evolution, and Behavior  
 Advisor: Rafael L Rodríguez
- 2006 – 2009**      **MS, University of California, Riverside**  
 Program: Evolution, Ecology, and Organismal Biology  
 Advisor: Marlene Zuk
- 1998 – 2002**      **BA, Oberlin College**  
 Major: Biology, Minor: Chemistry

**Publications**

**Peer-reviewed journals** (\* denotes equal contribution; underline denotes mentored student co-author)

- In press**      Roberton B, Rebar D. Timing of prescribed burns impacts plant diversity but not investment in pollinator recruitment in a tallgrass prairie. *Ecosphere*
- Eckols T, Roberton B, Clark B, **Rebar D**. Exploring the potential role of ants as pollinators in a tallgrass prairie following varied prescribed burns. *Transactions of the Kansas Academy of Science*
- Duarte A\*, **Rebar D\***, Hallett AC, Jarrett BJM, Kilner RM. Evolutionary change in the construction of the nursery environment when parents are prevented from caring for their young directly. *Proc Natl Acad Sci*
- 2021**      Visser B, Alborn HT, Rondeaux S, Hailiot M, Hance T, **Rebar D**, Riederer JM, Tiso S, van Eldijk TJB, Weissing FJ, Nieberding CM. Phenotypic plasticity explains apparent reverse evolution of fat synthesis in parasitic wasps. *Scientific Reports* 11: 1-13.

- 2020 **Rebar D\***, Bailey NW\*, Jarrett BJM, Kilner RM. An evolutionary switch from sibling rivalry to sibling competition, caused by a sustained loss of parental care. *Proc Natl Acad Sci* 117: 2544-2550.
- 2019 **Rebar D**, Barbosa F, Greenfield MD. Female reproductive plasticity to the social environment and its impact on male reproductive success. *Behav Ecol Sociobiol* 73: 48.
- 2018 Jarrett BJM, Evans E, Haynes W, Leaf M, **Rebar D**, Duarte A, Schrader M, Kilner RM. A sustained change in the supply of parental care causes adaptive evolution of offspring morphology. *Nature Communications* 9: 3987.
- Jarrett BJM\*, **Rebar D\***, Haynes HB, Leaf MR, Halliwell C, Kemp R, Kilner RM. Adaptive evolution of synchronous egg-hatching in compensation for the loss of parental care. *Proc R Soc B*: 20181452. (\* denotes equal contribution)
- Barbosa F, **Rebar D**, Greenfield MD. When do trade-offs occur? The roles of energy constraints and trait flexibility in bushcricket populations. *J Evol Biol* 31: 287-301.
- 2017 Schrader M, Jarrett BJM, **Rebar D**, Kilner RM. Adaptation to a novel family environment involves both apparent and cryptic phenotypic changes. *Proc R Soc B* 284: 20171295.
- Kilmer JT, Fowler-Finn KD, Gray DA, Höbel G, **Rebar D**, Reichert M, Rodríguez RL. Describing mate preference functions and other function-valued traits. *J Evol Biol* 30: 1658-1673.
- Jarrett BJM, Schrader M, **Rebar D**, Houslay TM, Kilner RM. Cooperative interactions within the family enhance the capacity for evolutionary change in body size. *Nature Ecol Evol* 1: 0178.
- Rebar D**, Greenfield MD. When do acoustic cues matter? Perceived competition and reproductive plasticity over lifespan in a bushcricket. *Anim Behav* 128: 41-49.
- 2016 Barbosa F, **Rebar D**, Greenfield MD. Female preference functions drive inter-population divergence in male signalling: call diversity in the bushcricket *Ephippiger diurnus*. *J Evol Biol*. 29: 2219-2228.
- Rebar D**, Rodríguez RL. Males adjust their signalling behaviour according to experience of male signals and male-female signal duets. *J Evol Biol* 29: 766-776.
- Rebar D**, Barbosa F, Greenfield MD. Acoustic experience influences male and female pre- and postcopulatory behavior in a bushcricket. *Behav Ecol* 27: 434-443.
- Barbosa F, **Rebar D**, Greenfield MD. Reproduction and immunity trade-offs constrain mating signals and nuptial gift size in a bushcricket. *Behav Ecol* 27: 109-117.
- 2015 **Rebar D**, Rodríguez RL. Insect mating signal and mate preference phenotypes covary among host plant genotypes. *Evolution* 69: 602-610.
- 2014 **Rebar D**, Rodríguez RL. Genetic variation in host plants contributes to variation in the mate preferences of a plant-feeding insect. *Amer Nat* 184: 489-499.
- Rebar D**, Rodríguez RL. Trees to treehoppers: genetic variation in host plants contributes to variation in the mating signals of a plant-feeding insect. *Ecol Lett* 17: 203-210.

- 2013**      **Rebar D**, Rodríguez RL. Genetic variation in social influence on mate preferences. *Proc R Soc B* 280: 20130803.
- Rodríguez RL, **Rebar D**, Fowler-Finn KD. The evolution and evolutionary consequences of social plasticity in mate preferences. *Anim Behav* 85: 1041-1047.
- Bailey NW, Fowler-Finn KD, **Rebar D**, Rodriguez RL. Green Symphonies or wind in the willows? Testing acoustic communication in plants. *Behav Ecol* 24: 797-798.
- 2012**      **Rebar D**, Höbel G, Rodríguez RL. Vibrational playback by means of airborne stimuli. *J Exp Biol* 215: 3513-3518.
- 2011**      **Rebar D**, Zuk M, Bailey NW. Mating experience in field crickets modifies pre- and postcopulatory female choice in parallel. *Behav Ecol* 22: 303-309.
- 2009**      **Rebar D**, Bailey NW, Zuk M. Courtship song's role during female mate choice in the field cricket *Teleogryllus oceanicus*. *Behav Ecol* 20: 1307-1314.
- 2008**      Zuk M, **Rebar D**, Scott SP. Courtship song is more variable than calling song in the field cricket *Teleogryllus oceanicus*. *Anim Behav* 76: 1065-1071.

#### Book chapters

- 2019**      Rodríguez RL, **Rebar D**, Bailey NW. Indirect genetic effects. In: Choe JC (Ed.), *Encyclopedia of Animal Behaviour 2<sup>nd</sup> Edition* 2: 49-55.

#### Manuscripts under review (\* denotes equal contribution; underline denotes student co-author)

**Rebar D**, Halliwell C, Kemp R, Kilner RM. Experimental evolution of a more restrained clutch size in burying beetles *Nicrophorus vespilloides*. *Evolution*.

**Rebar D**, Bishop C, Hallett AC. Anthropogenic light and noise affect the life histories of female *Gryllus veletis* field crickets. *Behavioral Ecology*

#### Science popularization

**Rebar D**. 2010. Why shout when she's standing right here? *Metaleptea: The Newsletter of the Orthopterists' Society* 30 (2): 7-8.

#### Grants and awards

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- 2020**      Faculty research assistance grant, ESU \$1500  
FRCC graduate research assistantship award, ESU \$8446  
PI: ESURP undergraduate research project, ESU \$6500
- 2019**      FRCC graduate research assistantship award, ESU \$9547  
Research improvement grant, ESU \$1151  
Kathrine K White faculty incentive grant, ESU \$1505
- 2018**      Research improvement grant, ESU \$1234  
Co-PI: ESURP undergraduate research project, ESU \$6500  
Co-PI: Research improvement grant, ESU \$1500
- 2017**      Co-PI: Kathrine K White faculty incentive grant, ESU \$700
- 2017 – 2020**      FRS-FNRS Postdoctoral Fellowship, Université Catholique de Louvain, Belgium, €150000; declined

2015 – 2017	POE Postdoctoral Fellowship, U. Nebraska-Lincoln, \$90000; declined
2014 – 2015	Fondation Fyssen Postdoctoral Fellowship, €50000
2012 – 2013	Dissertation Fellowship, UW-Milwaukee, \$16500
2011 – 2012	Distinguished Graduate Student Fellowship, UW-Milwaukee, \$14000
2010 – 2013	UW-Milwaukee Ruth Walker grant-in-aid award; awarded 4 times for a total of \$4 500 UW-Milwaukee James D. Anthony award; awarded 3 times for a total of \$600
2010	SSE Rosemary Grant Graduate Student Research Award, \$2500
2009 – 2013	Chancellor's graduate student award, UW-Milwaukee, awarded 8 times for a total of \$16000
2009	UC Riverside GSA travel grant, \$300
2008 – 2009	Teaching Assistant fellowship, UC Riverside, \$25000
2008	Orthopterists' Society research grant, \$800
2006 – 2007	Chancellor's distinguished fellowship, UC Riverside, \$13000

### **Invited talks (\*) and conference contributions (talk unless noted otherwise); †presented by co-author**

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2021	†Northern Plains Biological Symposium: Fargo, ND
2020	†Ecological Society of America annual conference: virtual †Kansas Natural Resources Conference: Manhattan, KS
2018	International Society of Behavioral Ecology: Minneapolis, MN
2017	Symposium co-organizer and speaker, Behaviour: Estoril, Portugal
2016	*Biodiversity Research Center, University of Louvain: Louvain-la-Neuve, Belgium Dept of Zoology Behavioural Ecology seminar series: Cambridge, United Kingdom
2015	Institut de Recherche sur la Biologie de l'Insecte (IRBI): Tours, France
2014	Ecology and Behaviour: Montpellier, France
2013	*Institut de Recherche sur la Biologie de l'Insecte (IRBI): Tours, France Royal Entomological Society: St. Andrews, United Kingdom
2012	Animal Behavior Society: Albuquerque, NM (poster)
2011	*Integrative Behavior Group, UW-Madison: Madison, WI
2010	Animal Behavior Society: Williamsburg, VA
2009	Dept of Evolution, Ecology, and Organismal Biology Gradfest: Riverside, CA Society for Integrative & Comparative Biology: Boston, MA (poster)

### **Non-conference talks (†presented by co-author)**

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2020	Club of Little Gardens: Kalamazoo, MI †Capitol Graduate Research Summit: Topeka, KS
2019	†ESU Research and Creativity Day: Emporia, KS

### **Teaching and mentoring**

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#### **Teaching**

#### **Lecture/lab courses (in alphabetical order) taught at Emporia State University**

Animal Behavior  
Animal Communication  
Ecology  
Entomology lecture and lab  
Forensic Entomology  
Graduate research seminar  
Introductory Biology

Invertebrate zoology lecture and lab  
Research Design and Analysis

**Discussion group leader/coordinator**

Ecology and Behavior, Emporia State University  
Behavioral ecology, University of Cambridge  
Evolution and behavior: Genes and individuals, University of Cambridge

**Teaching Assistant**

**2013** Introductory Biology, laboratory sections, UW-Milwaukee  
**2010** General Ecology, laboratory sections, UW-Milwaukee  
**2009** Introductory Biology, laboratory sections, UW-Milwaukee  
**2008** Evolutionary Biology, discussion sections, UC Riverside  
**2007** Introductory Evolution and Ecology, laboratory sections, UC Riverside

**Other Teaching Experiences**

**2004 – 2005** Teaching associate for 6-8<sup>th</sup> grade students, Citizen Schools, Boston, MA.  
**2002 – 2003** Instructor and Head Tech, Desert Sun Science Center, Idyllwild, CA.  
**2001 – 2002** Experimental College (EXCO) Instructor, Oberlin College, Oberlin, OH.

**Mentoring**

*Graduate students*

Thesis

**2018 – 2021** Bethany Robertson: Effects of variation in seasonal burns on plant communities, pollinator recruitment, and reproductive success

Projects

**2021 – present** Tingyuan Xuan: Immune function trade-offs when developing in anthropogenic light and noise  
**2017 – 2020** Daniel Kennedy: Consequences of anthropogenic noise and light on the mating behaviors of female field crickets

*Undergraduate students*

**2021** Corey Bishop: Consequences of developing in anthropogenic noise and light on field crickets, ESU  
**2020 – 2021** Tucker Eckols: Exploring the potential role of ants as pollinators in a tallgrass prairie following varied prescribed burns, ESU  
**2019 – 2020** Tyler Balsters: Survey of arthropod communities on industrial hemp, ESU  
**2018 – 2019** Joseph LaForge: Pollinator recruitment and native plant success in tallgrass prairies following seasonal burns, ESU  
**2016 – 2017** Rachel Kemp and Chay Halliwell: The evolution of clutch size, U Cambridge  
**2014 – 2015** Supervised three undergraduate research interns, IRBI  
**2014** Supervised a first-year master's project: Female preference functions and discrimination in *Achroia grisella*, IRBI  
**2010 – 2012** Graduate Mentor for Undergraduate research in Biology and Mathematics (UBM) program, UW-Milwaukee  
**2008 – 2009** Mentor Teaching Assistant for TA Development Program, UC Riverside.

## Professional service

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### Reviewing

**2008 –** Referee for 9 international peer-reviewed journals: *Animal Behaviour*, *Behavioral Ecology*, *Biological Journal of the Linnean Society*, *Biology Letters*, *Ecology and Evolution*, *Ethology*, *Evolution*, *Global Change Biology*, *Journal of Insect Behavior*

**2010 – present** Serve on the editorial board for the journal *Evolution: Education and Outreach*

### Other Service

**2010 – 2011** Fundraiser, Graduate Organization of Biological Sciences, UW-Milwaukee

**2008 – 2009** President, Biology Graduate Student Association, UC Riverside  
Graduate Student Recruitment Committee, UC Riverside

### Professional memberships

Animal Behaviour Society

Association for the Study of Animal Behaviour

International Society of Behavioral Ecology

Kansas Entomological Society

Society for the Study of Evolution