

# *Curriculum Vitae*

Jeffrey C. Schank

## **POSITIONS**

Associate Professor, University of California, Davis, 2003-present.

Assistant Professor, Animal Behavior Graduate Group, University of California, Davis, 2001-2003.

Assistant Professor, University of California, Davis, 1998-2003.

Postdoctoral Fellow, NIH NRSA, Indiana University, 1997-98.

Postdoctoral Fellow, NSF Regional Training Grant (RTG) from the Center for the Integrative Study of Animal Behavior (CISAB), Indiana University, 1994-1998.

Postdoctoral Fellow, NIH NRSA, University of Chicago, 1993-94.

Postdoctoral Fellow, NSF Individual Award, University of Chicago, 1992-93.

## **EDUCATION**

Ph.D., Conceptual Foundations of Science, University of Chicago. December, 1991.

MA, Biopsychology, University of Chicago, 1991.

MA, Philosophy, University of Nebraska-Lincoln, 1984.

BA, Psychology and Philosophy, University of Nebraska-Lincoln, 1978.

## **GRANTS, FELLOWSHIPS, AND AWARDS**

NIH R01 MH065555-01A2, PI, 2003-2008 "Modeling Complex Adaptive Social Behavior" (\$501,190.00)

NSF 0218927, Co-PI, 2002-2005, ITR: - "Research and Design of Group Behavior Development" (\$400,000.00)

NIH (Indiana subcontract), PI, 1998-2003 "Ontogeny of Control and Organization of Behavior" (\$172,740.00)

NIH NRSA Postdoctoral Training Fellowship, 1997-98.

NSF RTG Postdoctoral Fellowship from CISAB, Indiana University, 1994-1997.

NIH NRSA Postdoctoral Training Fellowship, 1993-94.

EDUCOM Award Winner for Distinguished Curriculum Innovation, 1992.

NSF Individual Award Postdoctoral Fellowship, 1991-92.

## **AFFILIATIONS**

Associate Editor, *Adaptive Behaviour*  
Associate, *Behavioral & Brain Sciences*  
Member, *Animal Behavior Society*  
Member, *New England Complex Systems Institute*  
Member, *American Psychological Society*

## RESENT PRESENTATIONS












- "Rat Pups and Robots." Talk presented at International Society for the History, Philosophy, and Social Studies of Biology meeting in Vienna Austria, July 16-20, 2003.
- "Whither Human Pheromones." Talk presented at The Human Behavior and Evolution Society meeting in Lincoln, Nebraska, June 4-10, 2003.
- "Rat Pups and Robots: A Multi-Model Approach to Situated Behavior." Talk presented at the Winter Animal Behavior Conference, Jackson Hole, WY, January 20-25, 2003.
- "Ovarian-Cycle Synchrony and Female Mate Choice" Talk presented at the Fourth International Conference on Complex Systems, Nashua, NH, June 9-14, 2002.
- "Pseudoreplication is a Pseudoproblem." Talk presented at the Winter Animal Behavior Conference, Jackson Hole, WY, January 21-26, 2002.
- "How can Individual-Based Modeling Contribute to a Better Understanding of Animal Behavior?" Talk presented at the Center for the Integrative Study of Animal Behavior, Graduate Seminar series, Social Learning, Social Intelligence, and Social Brains, Indiana University, October 18, 2001.
- "Do Mammals Synchronize their Ovarian Cycles?" Talk presented at the Max Planck Institute for Human Development, Center for Adaptive Behavior and Cognition, Berlin, Germany, September 3, 2001.
- "Beyond Reductionism: Refocusing on the Individual" Talk presented at the Winter Animal Behavior Conference, Jackson Hole, WY, January 21-27, 2001.
- "Individual-Based Models and Darwinian Algorithms" Talk presented at Darwin Club, University of California, Berkeley, April, 1999.
- "Individual-Based Models and Darwinian Algorithms" Talk presented at Modelling and Simulation across the Disciplines, University of Chicago, Chicago, April, 1999.

## PUBLICATIONS

### Journal Articles or Commentaries Published, in Press, or Accepted

1. Schank, J. C. (2003) Avoiding synchrony as a strategy of female mate choice. *Nonlinear Dynamics, Psychology, and Life Sciences* (in press).
2. Alberts, J. R., Motz, B. A. Schank, J. C. (2003). Positive geotaxis in infant rats: A natural behavior and an historical correction. *Journal of Comparative Psychology* (in press).

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Requests

3. Koehnle, T. J. & Schank, J. C. Power tools needed for the dynamical toolbox. *Adaptive Behavior* (accepted).
4. Schank, J. C. (2002). Where are all the genes? *Behavioral and Brain Sciences*, **25**: 527-528.
5. Schank, J. C. (2002). A multitude of errors in menstrual-synchrony research: Replies to Weller and Weller (2002) and Graham (2002). *Journal of Comparative Psychology*, **116**: 319-322.
6. Schank, J. C. (2001). Dimensions of modeling: generality and integrativeness. *Behavioral and Brain Sciences*, **24**: 1075-1076. 
7. Schank, J. C. (2001). Measurement and cycle variability: reexamining the case for ovarian-cycle synchrony in primates. *Behavioural Processes*, **56**: 131-146.
8. Schank, J. C. (2001). Beyond reductionism: refocusing on the individual with individual-based modeling. *Complexity*, **6**, 33-40. 
9. Schank, J. C. (2001). Oestrous and birth synchrony in Norway rats (*Rattus norvegicus*) *Animal Behaviour*, **62**: 409-415. 
10. Schank, J. C. (2001). Do Norway rats (*Rattus norvegicus*) synchronize their estrous cycles? *Physiology & Behavior*, **72**: 129-139. 
11. Schank, J. C. (2001). Menstrual-cycle synchrony: new issues and directions. *Journal of Comparative Psychology*, **115**: 3-15. 
12. Schank, J. C. (2000). Menstrual-cycle variability and measurement: further cause for doubt. *Psychoneuroendocrinology* **25**: 837-847. 
13. Schank, J. C. (2000). Can pseudo entrainment explain the synchrony of estrous cycles among golden hamsters (*Mesocricetus auratus*)? *Hormones and Behavior* **38**: 94-101. 
14. Schank, J. C. & J. R. Alberts (2000). The developmental emergence of coupled activity as cooperative aggregation in rat pups. *Proceedings of the Royal Society of London* **267**: 2307-2315. 
15. Schank, J. C. & J. R. Alberts (2000). Effects of male rat urine on reproductive and developmental parameters in the dam and her female offspring. *Hormones and Behavior* **38**: 130-136. 
16. Schank, J. C. & J. R. Alberts (2000). A general approach for calculating the likelihood of dyadic interactions: applications to sex preferences in rat pups and agonistic interactions in adults. *Animal Learning & Behavior* **28**: 354-359. 
17. Schank, J. C. (1997). Problems with dimensionless measurement models of synchrony in biological systems. *American Journal of Primatology*, **41**:65-85. 
18. Schank, J. C. & J. R. Alberts (1997). Self-organized huddles of rat pups modeled by simple rule of individual behavior. *Journal of Theoretical Biology*, **189**: 11-25.
19. Schank, J. C. & M. K. McClintock (1997). Ovulatory pheromone shortens ovarian cycles of female rats living in olfactory isolation. *Physiology & Behavior*, **62**:

899-904.

20. Jones, B., J. C. Schank & W. Sterner (1996). Modeling complex ecosystems using Biota. In: *Statistics, Mathematics and Computers*. Michael Kohl and George Z. Gertner (eds.) *Swiss Federal Institute for Forest, snow and Landscape Research*, Biemensdorf, Switzerland, pp. 171-182.
21. Schank, J. C., C. I. Tomasino & M. K. McClintock (1995). The development of a pheromone isolation and delivery (PID) system for small mammals. *Animal Technology*, **46**: 103-113.
22. Jones, B., W. Sterner & J. C. Schank, (1994). Biota: an object-oriented tool for modeling complex ecological systems. *Mathematical and Computer Modeling*, **20**: 31-40.
23. Schank, J. C. & M. K. McClintock (1992). A coupled-oscillator model of ovarian-cycle synchrony among female rats. *Journal of Theoretical Biology*, **157**: 317-362.

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### Book Chapters

24. Wimsatt, W. C. & J. C. Schank (2003). Generative entrenchment, modularity and evolvability: an apparent evolutionary paradox of frequency dependent modules. In: *Modularity in Development and Evolution*, Gerhard Schlosser and Gunter P. Wagner (eds.) Chicago: The University of Chicago Press (in press).
25. Schank, J. C. & C. Twardy (2003). Mathematical models the life sciences. In: Volume 6 of the Cambridge History of Science Series: *The Life and Earth Sciences*, (Peter J. Bowler and John Pickstone, eds.) Cambridge University Press (in press).
26. Schank, J. C. & W. C. Wimsatt (2000). Evolvability: adaptation and modularity. In : *Thinking About Evolution*, Cambridge University Press, Rama S. Singh (Ed.) pp. 322-335.
27. Wimsatt, W. C. & J. C. Schank (1988). Two constraints on the evolution of complex adaptations and the means for their avoidance. In M. Nitecki, (ed.), *Progress in Evolution*, Chicago: Univ. of Chicago Press: 231-273.
28. Schank, J. C. & W. C. Wimsatt (1987). Generative entrenchment and evolution. In A. Fine and P. K. Machamer, (eds.), *PSA-1986*, Vol. 2. East Lansing: The Philosophy of Science Association (PSA): 33-60.

### Proceedings

29. Schank, J. C. (2001). A new paradigm for evolutionary psychology: animal social systems as complex adaptive systems. Yaneer Bar-Yam (Ed.), New York: Perseus Books (forthcoming).
30. Schank, J. C. & J. R. Alberts (2000). Aggregation and the emergence of social interactions in rat pups modeled by simple rules of individual behavior. In:

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*Unifying Themes in Complex Systems* Yaneer Bar-Yam (Ed.), New York: Perseus Books, pp. 433-452.

31. Schank, J. C. & M. K. McClintock (1990). A computer simulation of ovarian cycle synchrony in female Rats: an object-oriented integration of computer simulation and laboratory experiment. In: B. Schmidt (ed.), *Modeling and Simulation*, The Society for Computer Simulation, San Diego, California: 590-596.



### **Textbook Chapters/Software**

32. Schank, J. C. & W. C. Wimsatt (1999). "Modelling tools: logistic growth and blending inheritance," *The BioQUEST Library IV*: (Collection Candidates): Academic Press.
33. Wimsatt, W. C. & J. C. Schank (1999). Modelling's primer. In: *BioQUEST*, J. R. Jungck, N. Peterson, & J. N. Calley (eds.), *The BioQUEST Library IV*: (The BioQUEST Core Collection): Academic Press.
34. Danbury, J., B. J. Jones, E. N. Kruper, W. Sterner, J. C. Schank, J. Lichtenstein, J. Weil, and W. C. Wimsatt (1999). "Biota," *The BioQUEST Library IV*: (The BioQUEST Core Collection): Academic Press.

### **Book Reviews and Published Abstracts**

29. Schank, J. C. (2002). Book review: Biological complexity and the dynamics of life processes (J. Ricard). *Quarterly Review of Biology*: 77, 55.
30. Schank, J. C. (1997). Self-organized huddles of infant rats modeled by simple rules of locomotion. *American Zoologist*, 37:97A
31. Schank, J. C. (1994). Selection, self-organization, and universal laws of form. *Quarterly Review of Biology* 69: 244-27 (A review of S. A. Kauffman's *Origins of Order*).
32. Schank, J. C. (1994). Book review: Learning and physiological regulation (B. R. Dworkin). *Animal Behavior* 47: 1495-96.

