

## Curriculum Vitae

Ulm, September 2008



PD Dr. Wolfgang Stein

Institute of Neurobiology

Ulm University

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### Personal

Date of Birth: 09. September 1969

Place of Birth: Speyer am Rhein, Germany.

Marital Status: married to Ilona Stein.

Citizenship: German.

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### Languages

English

French

German

Latin

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### Scientific career

2004 - Present	Junior faculty at the Institute of Neurobiology, Ulm University, Germany.
2000 - 2004	Research associate at the Institute of Neurobiology, Ulm University, Germany, in the laboratory of Dr. Harald Wolf.
1999 - 2000	Postdoctoral fellow at the Department of Neuroscience, School of Medicine, University of Pennsylvania, Philadelphia, USA, in the laboratory of Dr. Michael P. Nusbaum.
1998 - 1999	Postdoctoral fellow at the Department of Biological Cybernetics/theoretical Biology, University of Bielefeld, Germany, in the laboratory of Dr. Holk Cruse.
03/1998 - 08/1998	Postdoctoral fellow at the Institute of Neurobiology, Ulm University, Germany, in the laboratory of Dr. Harald Wolf.

02/1998	Ph.D. (Dr. rer. nat.), Department of Biology, University of Kaiserslautern, Germany. Dissertation: "Task-dependent changes in the femur-tibia joint control system of the stick insect <i>Cuniculina impigra</i> ".
1995 - 1998	Ph.D. student at the Department of Biology, University of Kaiserslautern, Germany. Advisors: Dr. Ulrich Bässler and Dr. Ansgar Büschges.
1995	Diploma in Biology at the Department of Biology, University of Kaiserslautern, Germany. Title: "Habituation of muscles responses in the stick insect".
1994 - 1995	Diploma student (Biology) at the Department of Biology, University of Kaiserslautern, Germany. Advisors: Dr. Ulrich Bässler and Dr. Joachim Deitmer.

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### Post-doctoral research summary

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2004 - Present Ulm University	Explored the processing of sensory information from different sense organs on the motor circuits in locusts and crustaceans (own lab). Experimental research and computer modeling.
2000 - 2004 Ulm University	Characterized the effects of neuromodulatory projection neurons on the selection of motor patterns from multifunctional networks (own lab and lab of Dr. Harald Wolf). Experimental research.
1999 - 2000 University of Pennsylvania	Studied the convergence and divergence of cotransmitters on pattern generation in the stomatogastric nervous system of the crab (lab of Dr. Michael P. Nusbaum). Experimental research.
1998 - 1999 University of Bielefeld	Characterized the interaction of different sense organs in the walking system of stick insects (lab of Dr. Holk Cruse and Dr. Josef Schmitz). Experimental research.
1998 Ulm University	Explored vibration sensitivity of the femoral chordotonal organ in the stick insect (lab of Dr. Harald Wolf and Dr. Ulrich Bässler). Experimental research.

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### Graduate and undergraduate research summary

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1995 - 1998 University of Kaiserslautern	Investigated the neuronal basis of adaptive gain changes in the walking system of the stick insect <i>Cuniculina impigra</i> (lab of Dr. Ulrich Bässler). Experimental research.
1994 - 1995 University of Kaiserslautern	Studied habituation with intracellular recordings from muscles in the stick insects <i>Cuniculina impigra</i> and <i>Carausius morosus</i> (lab of Dr. Ulrich Bässler). Experimental research.

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**Fellowships, Grants & Awards**


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07/2008	<b>Teaching Award 2008</b> of Ulm University for excellence in teaching and training of students, \$3,000.
01/2007	Grant STE937/5-1 of the <b>German Research Foundation</b> (DFG), \$120,000.
03/2006	<b>Albert &amp; Ellen Grass Faculty Award</b> for studies and research at the Marine Biological Laboratory, Woods Hole, USA, \$50,000.
06/2003	Grants STE937/2-1 and 2 of the of the <b>German Research Foundation</b> (DFG), \$150,000.
05/2003	Startup grant <b>Ulm University</b> , \$15,000.
02/1999	Fellowship <b>DAAD</b> (German Academic Exchange Service); declined.
08/1998	Research project („Olfactory behavior of the locust, <i>Schistocerca gregaria</i> “) at the International Center for Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya. Fellowship of GARN ( <b>German-American Academic Network</b> ), \$12,000.
08/1996 & 08/1997	Fellowship of the <b>German-American Academic Council</b> (GAAC) Foundation for participation at the seminars "The Organization of Behavior in Higher & Lower Animals" in Dietramszell, Germany and Bodega Bay, California, USA. Faculty: <i>Dr. Martin Heisenberg</i> (Würzburg) <i>Dr. Masakazu Konishi</i> (Pasadena, USA).
1995 - 1998	Fellowship of the <b>Graduiertenförderung</b> Rhineland-Palatinate at the University of Kaiserslautern.

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**Collaborations**


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2008 - Present	Dr. Jorge Golowasch, New Jersey Institute of Technology, Rutgers, USA. Project: Regeneration of motor patterns in the crustacean stomatogastric nervous system.
2008 - Present	Dr. Sadiq Yusuf, Kampala International University, Uganda. Project: Regeneration of motor patterns in the crustacean stomatogastric nervous system.
2008 - Present	Dr. Dietmar Fischer, Ulm University, Germany. Project: Axonal regeneration in retinal ganglion cells of the rat.
2007 - Present	Dr. Walter Federle, Cambridge, UK and Dr. Harald Wolf, Ulm University, Germany. Project: Characterization of the adhesion pads in the stick insects <i>Carausius morosus</i> and <i>Cuniculina impigra</i> .

2007 - 2008	Dr. Peter Andras, Newcastle University, Newcastle, UK. Project: Optical recordings from neurons in the stomatogastric nervous system.
2006 & 2008	Dr. Farzan Nadim, Rutgers University / New Jersey Institute of Technology, Rutgers, USA.
2006	Fraunhofer Institute for Software Engineering, Kaiserslautern, Germany. Project: Facial expression (FACS) software development.
2004 - Present	Dr. Harald Wolf, Ulm University, Germany. Project: The interaction of sensory feedback and motor pattern during locust flight.
2003 - Present	Dr. Wolfgang Mader, Ulm University, Germany. Project: Development of a tool for real-time modeling of neuronal circuits.
2001 - 2007	Dr. Michael P. Nusbaum, University of Pennsylvania, Philadelphia, USA. Project: Convergence and divergence of neuromodulatory cotransmitters.
2001 - 2004	Dr. Josef Schmitz, University of Bielefeld, Germany and Dr. Harald Wolf, Ulm University, Germany. Project: The effects of nitric oxide on the femur-tibia control system of stick insects and locusts.

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## Teaching

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01/2008	Qualification Aux Fonctions De Professeur Des Universités (France) for the topic Neuroscience.
11/2006	Postdoctoral lecturer qualification (Habilitation) in Zoology and Neurobiology at Ulm University. Title: The processing of sensory signals in the nervous system.
Spring 2007	Lecturer for "Zoom into Science" program.
2002 - 2008	Lecturer at the summer course "Neural Systems and Behavior" at the Marine Biological Laboratory in Woodshole, Massachusetts, USA, modeling and electrophysiological experiments.
2000 - 2008	Basic Animal Physiology course, Ulm University, Germany, including computer modeling of neuronal networks. Joint organizer.
2000 - 2008	Advanced Animal Physiology Course, Ulm University, Germany, including advanced computer modeling of neuronal networks. Organizer and lecturer.
2000 - 2008	Seminar Advanced Animal Physiology, Ulm University, Germany. Joint organizer and lecturer.
2001 - 2008	Methods in Neurobiology Course, Ulm University, Germany. Joint organizer and lecturer.
2001 - 2008	Animal Behavior Course, Ulm University, Germany. Joint organizer and lecturer.

1995 - 1998	Advanced Animal Physiology Course, University of Kaiserslautern, Germany, including computer modeling of neuronal networks.
1993 - 1998	Basic Animal Physiology course, University of Kaiserslautern, Germany.
1993 - 1995	Electronics for Biologists, University of Kaiserslautern, Germany

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### Leadership

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2005 - 2008	Neuroscience Seminar, Ulm University, Germany. Joint organizer.
2004 - 2008	Neuroscience Journal Club, Ulm University, Germany. Organizer.
2002 & 2007	National meeting of the BUGS initiative. Joint organizer
2003	National meeting of the Crustacean Society. Joint organizer.

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### Mentored graduate research (Institute of Neurobiology)

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2004 - Present	Nelly Daur (graduate student, Ulm University). Title: "Interaction of different sense organs in the stomatogastric nervous system of the crab."
2004 - 2008	Dr. Ulrike Hedrich (present address: Ulm University). Title: "The characterization of a descending brain pathway in the stomatogastric nervous system of the crab <i>Cancer pagurus</i> ."
2002 - 2007	Dr. Carmen Smarandache (present address: UC Davis, USA). Title: "The characterization of a muscle tendon organ in the stomatogastric nervous system of the crab <i>Cancer pagurus</i> ."
2004 - 2007	Dr. Jessica Ausborn (present address: Karolinska Institutet, Sweden). Title: "Emergent properties resulting from the interaction of sensory feedback and motor activity during locust flight"
2002 - 2006	Dr. Oliver Staub (present address: Roche Pharmaceuticals). Title: "Computer-simulation of task-dependent changes in the femur-tibia joint control system of the stick insect."

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### Mentored undergraduate research (Institute of Neurobiology)

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2008 - Present	Carola Stadele (Diploma student, Ulm University). Title: "The effects of nitric oxide on modulatory projection neurons in the stomatogastric nervous system of the crab."
2007 - Present	Florian Diehl (Diploma student, Ulm University). Title: "Modeling sensory feedback in real-time".
2007 - 2008	Stefanie Heigle (Diploma student, Ulm University). Title: "Temperature-dependent changes of motor patterns in the stomatogastric nervous system of the crab."

2004 - 2006	Nelly Daur (Diploma student, Ulm University). Title: "A tutorial for the MadSim computer modeling environment".
2001 - 2004	Ulrike Hedrich (Diploma student, Ulm University). Title: "The effects of nitric oxide donors on motor patterns in the stomatogastric nervous system of the crab".
2001 - 2004	Christina Eberle (Diploma student, Ulm University). Title: "The effects of nitric oxide blockers on motor patterns in the stomatogastric nervous system of the crab".
2001 - 2004	Melanie Nickmann (Diploma student, Ulm University). Title: "Facilitation in a gastric mill muscle of the crab <i>Cancer pagurus</i> ".
2001 - 2003	Carmen Smarandache (Diploma student, Ulm University). Title: "Development of a semi-intact preparation of the crab <i>Cancer pagurus</i> ".

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### Advisees (graduate students, external)

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2008	Thomas Hauk (graduate student, Ulm University)
2008	Jieun Lee (graduate student, Ulm University)
2007	Dr. Thomas Endlein (University of Würzburg)

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### Graduate committee member

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2008	Dr. Selina Bucher (graduate student, Ulm University)
2008	Kerstin Braunstein (graduate student, Ulm University)
2007	Dr. Eva Frei (Ulm University)

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### Professional affiliations

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2008 - Present	International Society for Neuroethology
2006 - Present	Arthropod Neuroscience Network
2005 - Present	Neurocenter Ulm (NCU)
2005 - 2007	EuroSys - The European Professional Society for Systems
1999 - Present	Society for Neuroscience

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**Ad hoc Reviewer**


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Journal of Comparative Physiology A

Journal of Neuroscience

Journal of Experimental Biology

Cell and Tissue Research

Proceedings of the National Academy of Science

Public Library of Science (PLoS ONE)

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**Publications (peer reviewed)**

\* corresponding author

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1. Hedrich, U.B.S & Stein, W.\* (2008) Characterization of a descending pathway: Activation and effects on motor patterns in the brachyuran crustacean stomatogastric nervous system. *J. Exp. Biol.*, 211:2624-2637.
2. Smarandache, C.R., Daur, N., Hedrich, U.B.S & Stein, W.\* (2008) Regulation of motor pattern frequency by reversals in proprioceptive feedback. *Europ. J. Neurosci.*, 28:460-474.
3. Stein, W.\*, Straub, O., Ausborn, J., Mader, W. & Wolf, W. (2008) Motor pattern selection by combinatorial code of interneuronal pathways. *J. Comput. Neurosci.* (Epub ahead of print).
4. Bässler, U., Wolf, H. & Stein, W.\* (2007) Functional recovery following manipulation of muscles and sense organs in the stick insect leg. *J. Comp. Physiol. A.*, 193:1151-68.
5. Stein, W., DeLong, N., Wood, D. & Nusbaum, M.P. (2007) Divergent Cotransmitter Actions Underlie Motor Pattern Activation by a Modulatory Projection Neuron. *Europ. J. Neurosci.*, 26: 1148–1165.
6. Ausborn, J., Stein, W.\* & Wolf, H. (2007) Frequency Control of Motor Pattern by Negative Sensory Feedback. *J. Neurosci.*, 27: 9319-9328.
7. Smarandache, C.R. & Stein, W.\* (2007) Sensory-induced modification of two motor patterns in the crab, *Cancer pagurus*. *J. Exp. Biol.*, 210: 2912-2922.
8. Stein, W.\*, Büschges, A. & Bässler, U. (2006) Intersegmental transfer of sensory signals in the stick insect leg muscle control system. *J. Neurobiol.* 66(11):1253-1269.
9. Stein, W.\*, Smarandache, C.R., Nickmann, M. & Hedrich, U.B.S. (2006) Functional consequences of activity-dependent synaptic enhancement at a crustacean neuromuscular junction. *J. Exp. Biol.* 209: 1285-1300.
10. Stein, W.\*, Eberle, C.C., & Hedrich, U.B.S. (2005) Motor pattern selection by nitric oxide in the stomatogastric nervous system of the crab. *Europ. J. Neurosci.* 21(10): 2767-2781.

11. Stein, W.\* & Ausborn, J. (2004) Analog modulation of digital computation in nerve cells: Simulating the stomatogastric nervous system of the crab. in: *Modelling and Simulation '2004* (Bobeau C., ed), pp.148-152. Ghent, Belgium: Eurosis-ETI.
12. Straub, O., Mader, W., Ausborn, J & Stein, W.\* (2004) Motor output variability in a joint control system - a simulation study. in: *Modelling and Simulation '2004* (Bobeau C., ed), pp.135-139. Ghent, Belgium: Eurosis-ETI.
13. Christie, A.E., Stein, W., Quinlan, J.E., Beenhakker, M.P., Marder, E. & Nusbaum, M.P. (2004) Actions of a histaminergic/peptidergic projection neuron on rhythmic motor patterns in the stomatogastric nervous system of the crab *Cancer borealis*. *J. Comp. Neurol.* 469:153-169.
14. Wood, D.E., Stein, W. & Nusbaum, M.P. (2000) Projection Neurons with Shared Cotransmitters Elicit Different Motor Patterns from the Same Neural Circuit. *J. Neurosci.* 20(23):8943-8953.
15. Schmitz, J. & Stein, W. (2000) Convergence of Load and Movement Information onto Leg Motoneurons in Insects. *J. Neurobiol.* 43: 424-436.
16. Stein, W.\* & Schmitz, J. (1999) Multimodal convergence of presynaptic afferent inhibition in insect proprioceptors. *J. Neurophysiol.* 83: 512-514.
17. Sauer, A.E. & Stein, W. (1999) Sensorimotor pathways processing vibratory signals from the femoral chordotonal organ of the stick insect. *J Comp. Physiol. A*, 185: 21-31.
18. Stein, W.\* & Sauer, A.E (1999) Physiology of vibration sensitive afferents in the mesothoracic femoral chordotonal organ of the stick insect *Cuniculina impigra*. *J. Comp. Physiol. A*, 184: 253-263.
19. Stein, W.\* & Sauer, A.E (1998) Modulation of sensorimotor pathways associated with gain changes in a posture-control network of an insect. *J. Comp. Physiol. A* 183(4): 489-501.
20. Sauer, A.E., Büschges, A., & Stein, W. (1997) The role of presynaptic afferent inhibition in tuning sensorimotor pathways in an insect joint-control network. *J. Neurobiol.* 32: 359-376.
21. Bässler, U. & Stein, W. (1996) Contributions of structure and innervation pattern of the stick insect extensor tibiae muscle to the filter characteristics of the muscle-joint system. *J. Exp. Biol.* 199: 2185-2198.

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### **Publications (Essays)**

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1. Stein, W.\* & Ausborn, A. (2008) Wenn das Ganze mehr als die Summe seiner Teile ist - Der Einsatz von Computermodellen zur Detektion emergenter Eigenschaften. *Bioforum* (in press).

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### **Publications (submitted and in preparation)**

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1. Ausborn, A., Wolf, H. & Stein, W.\* (2008) The interaction of positive and negative sensory feedback loops in dynamic regulation of a motor pattern. *J. Comput. Neurosci.* (submitted).
2. Daur, N., Nadim, F. & Stein, W.\* (2008) Regulation of motor patterns by the central spike initiation zone of a sensory neuron. *J. Exp. Biol.* (in preparation).

3. Hedrich, U.B.S., Smarandache, C.R. & Stein, W. \* (2008) Motor pattern selection by a combinatorial code of neuromodulatory projection neurons. *J. Neurosci.* (in preparation).

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### **Publications (Symposia and talks at meetings)** \*presenter

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1. Stein, W.\* (2007) Convergent and divergent actions of neuromodulators on motor pattern activation. *BUGS meeting*, Weidach, Germany.
2. Stein, W.\* (2007) Motor Pattern Selection in the Stomatogastric Nervous System by Nitric Oxide. *Proceedings of the 7th Meeting of the German Neuroscience Society / 31th. Göttingen Neurobiology Conference 2007.*
3. Daur, N. & Stein, W. (2007) Spontaneous tonic firing of a sensory neuron affects the gastric mill motor pattern. *STG meeting*, San Diego, USA.
4. Hedrich, U.B.S. & Stein, W. The actions of a descending brain pathway on modulatory projection neurons and STG circuit neurons. *STG meeting*, San Diego, USA.
5. Smarandache, C.R. & Stein, W. (2006) The effects of the sensory cell AGR on the activities of projection neurons in the crab. *STG meeting*, Atlanta, USA.
6. Stein, W.\* (2005) Sensory feedback – what happens when you close the loop? *STG meeting*, Washington, D.C., USA.
7. Stein, W. & Smarandache, C.R. (2005) Sensory intergration in the stomatogastric nervous system. *BUGS meeting*, Bielefeld, Germany.
8. Stein, W.\* (2005) Sensory integration and neuromodulation in rhythmically active systems - lessons from a small network. *General meeting of the NeuroCentrum Ulm*, Ulm, Germany.
9. Stein, W.\* (2003) Convergence and divergence of peptide cotransmitter actions: Functional consequences in a multifunctional network. *Proceedings of the 29th Göttingen Neurobiology Conference 2003.*
10. Stein, W.\*, Eberle, C.C. & Smarandache, C.R. (2002) The stomatogastric nervous system of the edible crab: beyond *in vitro* rhythms. *Deutsche Zool. Gesellschaft 2002*, Halle, Germany.
11. Stein, W.\*, Hertzberg, S., Wood, D.E. & Nusbaum, M.P. (2001) Functional compartmentalization of cotransmitter actions. *East Coast Nerve Net*, Woods Hole, USA.
12. Stein, W.\*, Wood, D.E. & Nusbaum, M.P. (2000) Convergence and Divergence of Cotransmitter Actions. *East Coast Nerve Net*, Woods Hole, USA.
13. Sauer, A.E., Büschges, A., Stein, W., Bässler, U. (1996) Reorganization of distributed networks underlies flexibility of joint control networks. *Proceedings of the 24th Göttingen Neurobiology Conference 1996.*

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### **Publications (Abstracts and Posters)**

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1. Ausborn, J., Stein, W. & Wolf, H. (2008) Central oscillations can enhance the responsiveness of motor systems to sensory perturbations. *Soc. Neurosci. 2008, Washington, USA.*
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2. Heigele, S. & Stein, W. (2008) A small leak will sink a great ship: even small temperature changes affect motor pattern generation. *Soc. Neurosci. 2008, Washington, USA.*
  3. Diehl, F. & Stein, W. (2008) A real-time model of a muscle tendon organ in the stomatogastric nervous system of the crab. *Soc. Neurosci. 2008, Washington, USA.*
  4. Hedrich, U.B.S. & (Stein, W.) (2008) *In vivo* recordings of modulatory projection neurons. *Soc. Neurosci. 2008, Washington, USA.*
  5. Daur, N. & Stein, W. (2008) Modulation of a central spike initiation zone in a sensory neuron. *Soc. Neurosci. 2008, Washington, USA.*
  6. Smarandache, C.R. & Stein, W. (2007). Convergence of a sensory pathway and a descending brain projection onto modulatory projection neurons. *Soc. Neurosci. 2007, San Diego, USA.*
  7. Daur, N. & Stein, W. (2007). Functional aspects of a second spike-initiation zone in a sensory neuron. *Soc. Neurosci. 2007, San Diego, USA.*
  8. Hedrich, U.B.S. & Stein, W. (2007). From the brain to the motor system: *in vivo* characterization of a descending pathway in the crab *Cancer pagurus*. *Soc. Neurosci. 2007, San Diego, USA.*
  9. Ausborn, J., Stein, W., Mader, M. & Wolf, H. (2007). Proprioceptive feedback enables frequency regulation of pattern generators. *Proceedings of the 7th Meeting of the German Neuroscience Society / 31th. Göttingen Neurobiology Conference 2007.*
  10. Mader, M., Straub, O., Daur, N., Ausborn, J. & Stein, W. (2007) A neuronal model for the detection of thresholds. *Proceedings of the 7th Meeting of the German Neuroscience Society / 31th. Göttingen Neurobiology Conference 2007.*
  11. Hedrich, U.B.S., Smarandache, C.R. & Stein, W. (2007) Synaptic inputs to modulatory projection neurons. *Proceedings of the 7th Meeting of the German Neuroscience Society / 31th. Göttingen Neurobiology Conference 2007.*
  12. Hedrich, U.B.S., Smarandache, C.R. & Stein, W. (2006) How two brain cells affect the filtering and chewing of food in the foregut of the crab. *Soc. Neurosci. 2006, Atlanta, USA.*
  13. Smarandache, C.R., Hedrich, U.B.S. & Stein, W. (2006) The influence of a sensory cell on projection neurons in the stomatogastric nervous system of the crab. *Soc. Neurosci. 2006, Atlanta, USA.*
  14. Daur, N., Smarandache, C.R., Hedrich, U.B.S. & Stein, W. (2006) *In vivo* activation of a sensory neuron in the stomatogastric nervous system of the crab. *Soc. Neurosci. 2006, Atlanta, USA.*
  15. Hedrich, U.B.S., Nickmann, M., Smarandache, C.R. & Stein, W. (2005) Long term effects on facilitation at a neuromuscular junction of the crab. *Soc. Neurosci. 2005, Washington, USA.*
  16. Smarandache, C.R. & Stein, W. (2005) The influence of a sensory cell on the central pattern generators in the stomatogastric nervous system of the crab. *Soc. Neurosci. 2005, Washington, USA.*
  17. Stein, W., Mader, W., Smarandache, C.R., Hedrich, U.B.S. & Ausborn, J. (2005) The effects of a sensory neuron on a central pattern generator in artificially closed loop conditions. *Soc. Neurosci. 2005, Washington, USA.*
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18. Straub, O., Daur, N., Ausborn, J., Mader, M. & Stein, W. (2005) How to switch from standing to walking. *Proceedings of the 6th Meeting of the German Neuroscience Society / 30th. Göttingen Neurobiology Conference 2005*. eds: H. Zimmermann and K. Kriegelstein. *Neuroforum* 2005, 1 Suppl.: 451B.
  19. Hedrich, U.B.S., Eberle, C.C. & Stein, W. (2005) Nitric oxide indirectly controls the central pattern generators in the stomatogastric nervous system of the crab. *Proceedings of the 6th Meeting of the German Neuroscience Society / 30th. Göttingen Neurobiology Conference 2005*. eds: H. Zimmermann and K. Kriegelstein. *Neuroforum* 2005, 1 Suppl.: 83A.
  20. Nickmann, M, Smarandache, C.R. & Stein, W. (2005) Temporal dynamics of facilitation at a crustacean neuromuscular junction. *Proceedings of the 6th Meeting of the German Neuroscience Society / 30th. Göttingen Neurobiology Conference 2005*. eds: H. Zimmermann and K. Kriegelstein. *Neuroforum* 2005, 1 Suppl.: 73A.
  21. Stein, W. & Smarandache, C.R. (2005) Characterization of a sensory input that entrains a central pattern generator in the stomatogastric nervous system of the crab. *Proceedings of the 6th Meeting of the German Neuroscience Society / 30th. Göttingen Neurobiology Conference 2005*. eds: H. Zimmermann and K. Kriegelstein. *Neuroforum* 2005, 1 Suppl.: 82A.
  22. Eberle, C.C., Hedrich, U.B.S. & Stein, W. (2004) Nitric oxide indirectly affects a central pattern generator in the stomatogastric nervous system of the crab. *Soc. Neurosci. 2004, San Diego, USA*.
  23. Stein, W. & Smarandache, C.R. (2004) Entrainment of a central pattern generator by sensory feedback in the stomatogastric nervous system of the crab. *Soc. Neurosci. 2004, San Diego, USA*.
  24. Eberle, C.C., Hedrich, U. B. S. & Stein, W. (2004) Nitric oxide affects the central pattern generators in the stomatogastric nervous system of the crab. *Interdisciplinary college 2004, Göttingen*.
  25. Ausborn, J., Mader, W., Straub, O., & Stein, W. (2004) Modeling neuronal networks with MadSim. *Interdisciplinary College 2004, Göttingen*.
  26. Ausborn, J., Mader, W., & Stein, W. (2003) The effect of presynaptic inhibition on the model gastric mill central pattern generator of the crab. *Soc. Neurosci. 2003, New Orleans, USA*.
  27. Smarandache; C.R., Eberle, C.C. & Stein, W. (2003) A sensory neuron in a positive feedback loop and its influence on the gastric mill rhythm of the crab, cancer pagurus. *Soc Neurosci 2003, New Orleans, USA*.
  28. Schmitz, J. & Stein, W. (2003) The Role of Nitric Oxide in a Sensorimotor Pathway of the Stick Insect. *Soc. Neurosci. 2003, New Orleans, USA*.
  29. Smarandache, C.R & Stein, W. (2003) A sensory neuron in a positive feedback loop and its influence on a central pattern generator. *Proceedings of the 29th Göttingen Neurobiology Conference 2003*.
  30. Mader W., Ausborn, J., Straub, O. & Stein W. (2003) MadSim - a tool for simulating biological neuronal networks. *Proceedings of the 29th Göttingen Neurobiology Conference 2003*.
  31. Ausborn J., Mader W., Eberle, C.C. & Stein W. (2003) Functional consequences of presynaptic inhibition in an oscillatory network – a simulation study. *Proceedings of the 29th Göttingen Neurobiology Conference 2003*.
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32. Ausborn J., Mader W., Eberle, C.C. & Stein W. (2003) Mechanisms of rhythm generation - modelling the gastric mill rhythm of the crab *Cancer pagurus*. *11. Crustaceologentagung, Feb. 2003, Ulm.*
  33. Smarandache, C.R & Stein, W. (2003) Activation of a sensory neuron in the stomatogastric nervous system of *Cancer pagurus* and its effects on a central pattern generator. *11. Crustaceologentagung, Feb. 2003, Ulm.*
  34. Stein, W., Hertzberg, S.R. & Nusbaum, M.P. (2001) Direct and indirect circuit modulation by cotransmitters. *Soc. Neurosci. 2001, San Diego, USA.*
  35. Stein, W., Hertzberg, S.R. & Nusbaum, M.P. (2001) Functional compartmentalization of cotransmitter actions. *Proceedings of the 6th International Congress of Neuroethology 2001, Bonn.*
  36. Stein, W. & Nusbaum, M.P. (2000) Convergence and divergence of peptide cotransmitter actions. *Soc. Neurosci. 2000, New Orleans, USA.*
  37. Christie, A.E., Stein, W., Quinlan, J.E. & Nusbaum, M.P. (2000) Histaminergic innervation of the crab stomatogastric system. *Soc. Neurosci. 2000, New Orleans, USA.*
  38. Christie, A.E., Quinlan, J.E., Stein, W., & Nusbaum, M.P. (1999) Identification of Histaminergic Pathways to the Crab STG. *East Coast Nerve Net, Woods Hole, USA.*
  39. Sauer, A.E., Stein, W., Schmitz, J. & Wolf, H. (1999) Modulation of presynaptic inputs to chordotonal organ afferents in the stick insect by sensory and central neuronal pathways. *Proceedings of the 27th Göttingen Neurobiology Conference 1999.*
  40. Stein, W. (1999) Local interneurons processing contralateral proprioceptive information in the stick insect. *Proceedings of the 27th Göttingen Neurobiology Conference 1999.*
  41. Schmitz, J. & Stein, W. (1999) Information processing of load and position signals at the level of motoneurons in the stick insect. *Proceedings of the 27th Göttingen Neurobiology Conference 1999.*
  42. Stein, W. & Schmitz, J. (1999) Response characteristics and presynaptic inhibition of campaniform sensilla afferents in the stick insect. *Proceedings of the 27th Göttingen Neurobiology Conference 1999.*
  43. Sauer, A.E. & Stein, W. (1998) Central processing of vibration information from the femoral chordotonal organ in the stick insect *Cuniculina impigra*. *Proceedings of the 26th Göttingen Neurobiology Conference 1998.*
  44. Stein, W. & Sauer, A.E. (1997) Vibration sensitivity of the femoral chordotonal organ in the stick insect *Cuniculina impigra*. *Proceedings of the 25th Göttingen Neurobiology Conference 1997.*
  45. Stein, W. (1996) Interleg coupling in the stick insect *Cuniculina impigra*. *Proceedings of the 24th Göttingen Neurobiology Conference 1996.*
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