

- Mitteilungen
 - Aus der Sozietät
 - Außerhalb der Sozietät
- Klassen
 - Naturwissenschaften und Technikwissenschaften
 - Sozial- und Geisteswissenschaften
- Arbeitskreise
 - Allgemeine Technologie
 - Emergente Systeme
 - Geo-, Montan-, Umwelt-, Weltraum-, Astrowissenschaften
 - Gesellschaftsanalyse und Klassen
 - Kommission für Akademie- und

[← Vorherige](#)

Informationen von unserem Mitglied Germaine Cornelissen über die Aktivitäten des Halberg Chronobiology Center im Jahr 2015

Veröffentlicht am 11. Januar 2016

Kollegin Germaine Cornelissen (MLS) schreibt:

„As we are reaching the end of the year, it is a time to reflect. There are so many things we can be thankful for. Thanks to our team in Minnesota and many colleagues worldwide, the HCC has been as active and as productive as ever. This year's highlights are summarized below. The invitation to become a JAXA/NASA investigator led to a new project with Professor Kuniaki Otsuka on the ECG monitoring of astronauts during long-term missions on the International Space Station. Although endpoints of heart rate variability (HRV) followed a circadian rhythm in space as on earth, the fractal scaling of the long-term HRV experienced significant and consistent disruption under microgravity conditions, especially when the participants were awake. The results hold important implications for long-term space missions as they suggest that the intrinsic cardiovascular autonomic regulatory system may not



Die nächsten Termine

- 28. Januar 2016 @ 10:00 - 12:00
Januar-Sitzung des Plenums der Leibniz-Sozietät Einstein-Newton-Kabinett
- 28. Januar 2016 @ 13:30 - 16:00
Jahresgeschäftssitzung der Leibniz-Sozietät, Terminpräzisierung! WISTA GmbH, Rudower Chaussee 17
- 5. Februar 2016 @ 14:00 - 17:00

- Wissenschaftsgeschichte
- Pädagogik
- Prinzip Einfachheit
- Toleranz
- Vormärz und 48er Revolutionsforschung
- Zeit und Evolution
- Personalia
 - Wahlen
 - Ehrenmitglieder
 - Ehrungen
 - Jubiläen
 - Nekrologe
- Publikationen
 - Sitzungsberichte
 - Abhandlungen
 - Leibniz Intern
 - Leibniz Online
 - Einzelpublikationen
 - Pressemitteilung
- Veranstaltungen
 - Plenum
 - Klassen
 - Arbeitskreise
 - Leibniz-Tag
 - Jahrestagungen

Autoren

Wähle den Autor ▼

Archive

adapt to microgravity in space. These results were published in npj Microgravity [1].

Also with Kuniaki, analyses of our database of 7-day/24-hour ABPM data collected in a community in northern Japan investigated the effect of mild depression on blood pressure. Results indicate that even a mildly depressive mood was associated with shorter sleep duration, lower subjective quality of life and happiness, and altered 7-day/24-hour systolic blood pressure variability [2], stressing the importance of monitoring blood pressure for longer 24 hours. These findings, together with several detailed case reports are part of a book on chronomics soon to become available from Springer [3].

With Professor Jarmila Siegelova and her team, we examined the database of 7-day/24-hour ABPM data she collected at Masaryk University, Brno, Czech Republic to quantify the novelty pressor effect by comparing circadian rhythm parameters in consecutive days of monitoring. We found that on the first day, blood pressure was 2-3.5 mmHg higher and the circadian double amplitude of blood pressure 3-4 mmHg larger on average as compared to subsequent days. Moreover, we found that the novelty pressor effect on the circadian amplitude of blood pressure can last longer than 24 hours [4]. Further evidence underlying the need for 7-day/24-hour ABPM and for their chronobiologic interpretation was also presented at the yearly meeting on Noninvasive Methods in Cardiology organized by Jarmila [5].

Within the scope of our project on the BIOSphere and the COSmos (BIOCOS), changes in blood pressure and heart rate during a 2-month stay at the Mendel research base in Antarctica were evaluated in a group of participants of the 5th and 6th Czech Antarctic Scientific Expeditions, by comparison to ABPM recordings in their home country. On the average, blood pressure and heart rate in Antarctica were significantly elevated and there was a higher prevalence of circadian overswing (or CHAT, Circadian Hyper-Amplitude-Tension, a condition associated with an increased cardiovascular disease risk even in the absence of high blood pressure) [6].

Cooperation continued with Dr. Ram B Singh in the fields of cardiology and nutrition. As editors of the World Heart Journal, we seek to

Workshop des AK
Gesellschaftsanalyse
und Klassen
Berlin, Rathaus
Tiergarten, Balkon-
Saal

- 11. Februar 2016 @
10:00 - 12:00
Februar-Sitzung der
Klasse
Naturwissenschaften
und
Technikwissenschaftler
Rathaus Tiergarten,
Raum 505
- 11. Februar 2016 @
10:00 - 12:00
Februar-Sitzung der
Klasse Sozial- und
Geisteswissenschaften
- Änderung!
Berlin Rathaus
Tiergarten, BVV-
Saal

[Alle Veranstaltungen
ansehen](#)

Letzte Kommentare

- Werner Krause bei
INTERNETZEITSCHRIFT
Leibniz Online, Nr.
21 (2016)

Archive

Wähle den Mona ▾

Meta

- [Anmelden](#)
- [Beitrags-Feed \(RSS\)](#)
- [Kommentare als RSS](#)
- [WordPress.org](#)

increase the impact of the journal as well as the awareness of chronobiologic principles as they relate to health surveillance and maintenance, diagnosis and prognosis, and treatment optimization by timing.

Also within the scope of BIOCOS, in cooperation with Professors RK and Ranjana Singh, the circadian rhythm of circulating plasma lipid components was assessed in healthy Indians of different age groups. Total cholesterol, phospholipids and total lipids were found to be higher in females than in males, whereas the opposite held for HDL-cholesterol. Trends with age were not invariably linear: HDL-cholesterol, phospholipids, and total lipids were found to reach a maximum around mid-adulthood, as did the circadian amplitude of phospholipids, whereas the circadian amplitude of total cholesterol was minimal around mid-adulthood [7]. We also determined the circadian rhythm of lipid peroxides and anti-oxidant defense mechanisms in patients with peptic ulcers as compared to age-matched clinically healthy volunteers. Patients were found to have lower malondialdehyde, blood superoxide dismutase, glutathione peroxide, glutathione reductase, ascorbic acid, and HDL-cholesterol, as well as a dampened circadian variation of these variables, except for malondialdehyde and albumin that had an amplified circadian rhythm [8]. These results are presently being included in an invited chapter on cholesterol.

Another ongoing BIOCOS project is underway in Siberia with Professor Denis Gubin. Several databases are being assembled of emergencies resulting in a call for an ambulance. The circadian pattern of the incidence of several disease conditions is being assessed and compared in different age groups and in several geographic locations differing greatly in their latitude.

Cooperation continued with Professor Weihong Pan, now Medical Director of the Biopotentials Sleep Center in Baton Rouge, LA. With her, we studied how sleep fragmentation blunts the circadian variation of autophagy in mouse hippocampus. A manuscript is currently being considered for publication.

With Elizabeth Lusczek, Assistant Professor in the department of surgery at the University of Minnesota, a pilot study is under way to

- Lothar Kolditz bei INTERNETZEITSCHRIFT Leibniz Online, Nr. 21 (2016)
- Heinz Kautzleben, MLS bei Sitzung der Klasse Naturwissenschaften und Technikwissenschaftler zu „100 Jahre Allgemeine Relativitätstheorie“: Kurzbericht
- Hans Eckhard Offhaus bei Neuer Arbeitskreis „Emergente Systeme ...“ gegründet
- Adolf Rüger bei Nachruf für MLS Peter H. Feist

Empfohlene Links

- [Berlin-Brandenburgische Akademie der Wissenschaften](#)
- [Leibniz-Institut für interdisziplinäre Studien e.V. \(LIFIS\)](#)

monitor circadian rhythms of vital signs in healthy people and in patients admitted in the intensive care unit. This feasibility study will serve as a reference for assessing planned interventions to strengthen the circadian system of patients with the aim to improve outcomes such as length of hospital stay and the incidence of complications. At the HCC, Cathy Lee Gierke completed her project “Testing Chronomics Analysis Toolkit (CATkit)”, funded by the University of Minnesota Retiree Association. CATkit is an R package for analysis of periodicities in time series and open-source suite of rhythm analysis tools running on UNIX, Windows and Macintosh platforms. Cathy published [9] and presented her work at the Gordon Research Conference on Chronobiology held in Girona, Spain from June 28 to July 3, 2015. She was also invited to present applications of her software at the meeting in Brno [10] and at the first meeting of the newly founded Indian Society for Chronomedicine held in Ahmedabad, India on November 22-23, 2015, where Germaine was invited to deliver the keynote lecture. Professor Douglas Wilson, who also lectured in Ahmedabad, offered to do the beta-testing of Cathy’s software. Work at the HCC on blood pressure variability was also prominently featured at the 8th International Congress of Cardiovascular Diseases held on August 13-15 in Recife, Brazil. The HCC keeps attracting visitors. Continuing a long-term tradition, Professor Yoshihiko Watanabe came to work with us to optimize the administration of several anti-hypertensive drug combinations by timing. His 7-day/24-hour ABPM records of patients treated daily with losartan-hydrochlorothiazide at each of 6 different circadian stages during consecutive monthly spans have been further analyzed. Estimates of the circadian rhythm characteristics were obtained on a daily basis in order to assess the circadian-stage-dependent response to treatment on a personalized basis [11]. Results indicate that well over 50% of the patients are likely to benefit from the individual optimization of treatment timing (chronotherapy) by further lowering of blood pressure and/or by the elimination of other abnormal patterns of blood pressure and heart rate variability (the vascular variability disorders). Dr. Fabien De Meester also visited the HCC this year to discuss ways of

- [Leibniz-Journal - Das Magazin der Leibniz-Gemeinschaft](#)
- [Leibniz-Sozietät auf Wikipedia](#)
- [Musikakademie Rheinsberg](#)
- [PDF-Reader](#)
- [rss-Informationen](#)
- [trafo Verlagsgruppe Dr. Wolfgang Weist](#)
- [WordPress Deutschland Forum](#)

Zähler

1079022 Besucher

improving the yield of chicken farms by manipulating environmental synchronizers. With Professor Noel Petit from Augsburg College and John Uldrich, results on “Nowcasting of human health hazards from terrestrial and space weather” were presented at an Expert Meeting on Biometeorological and Bioclimatic Forecasts held on November 30 - December 2 in Havana, Cuba. To warnings now issued by Med-Weather in relation to changes in weather conditions, merits of mapping long-term periodicities shared between space weather and biota were discussed at the conference. Emphasis was placed on ongoing plans at the HCC for an “atlas of chronomes” (broad time structures, defined by their rhythm characteristics: period, amplitude and phase) aiming to better understand broad environmental influences on human health. While these data were presented by Noel Petit in Cuba, Germaine delivered her invited lecture on a related topic at the 12th European Space Weather Week on November 26 in Oostende, Belgium. Based on multiple records of environmental and biological data, she pointed out that shared periodicities may trickle down from space to earth via the ionosphere, weather conditions, and economic cycles. Influences of space and terrestrial weather on human physiology and pathology were also the topic of an invited chapter in PJ Rosch’s book on *Bioelectromagnetic and Subtle Energy Medicine* [12].

Thanks to staff at the HCC, Mary Sampson and Cathy Lee Gierke in particular, and with help from Professor Miguel Revilla and Nancy Rowe, we have a new website. Please visit us at

<http://halbergchronobiologycenter.umn.edu> where you can meet our key collaborators, download some tutorials on chronobiology and see recently published titles. You will also find the full bibliography of Franz Halberg along with his curriculum vitae, interviews he gave, an autobiography, and a page illustrating his life in pictures. A recent article [13] summarizing the two main avenues of research that are the mandate of the HCC, namely clinical applications of the chronobiologic interpretation of around-the-clock blood pressure and heart rate records on the one hand and the study of environmental influences on human physiopathology on the other hand, is also available from our website.

This year, the HCC was very happy to see several students from

Integrative Biology and Physiology opting to learn about topics in chronobiology to write their term paper. James Fleming stayed on to work on a research project which he presented at Cardio Palooza 7 on July 29, 2015, a venue organized jointly between the department of *Integrative Biology and Physiology* and the Lillehei Institute (Cardiology) with which our HCC is affiliated. There, he showed how several aspects of the circadian rhythm in LF/HF, a frequency-domain endpoint of heart rate variability reflecting sympathetic activity, changes as a function of age.

The HCC continues to benefit from cooperation with many more colleagues locally, nationally, and internationally. In particular, we are grateful to Drs. Francine and Julia Halberg who serve as advisors to the HCC. Their continued support of activities at the HCC is much appreciated.

With the Season's Greetings from the Halberg Chronobiology Center and BIOCOS.

Referneces:

1. Otsuka K, **Cornelissen G**, Kubo Y, Hayashi M, Yamamoto N, Shibata K, Aiba T, Furukawa S, Ohshima H, Mukai C. Intrinsic cardiovascular autonomic regulatory system of astronauts exposed long-term to microgravity in space: observational study. *npj Microgravity* 2015; 1: 15018. doi:10.1038/npjmgrav.2015.18. Published online 30 Nov 2015.
2. Okajima K, Yamanaka G, Oinuma S, Kikichi T, Yamanaka T, Otsuka K, **Cornelissen G**. Even mild depression is associated with among-day blood pressure variability, including masked non-dipping assessed by 7-d/24-h ambulatory blood pressure monitoring. *Clin Exp Hypertens*. 2015; 37 (5): 426-432.
3. Otsuka K, **Cornelissen G**, Halberg F. *Chronomics and Continuous Ambulatory Blood Pressure Monitoring - Vascular Chronomics: From 7-Day/24-Hour to Lifelong Monitoring*. Springer, in press.
4. **Cornelissen G**, Otsuka K, Watanabe Y, Lee Gierke C, Beaty L, Havelkova A, Dusek J, Siegelova J. Why 7-day/24-hour ambulatory blood pressure monitoring? Day-to-day variability in blood pressure

- and the novelty effect. In: Kenner T, **Cornelissen G**, Siegelova J, Dobsak P. (Eds.) *Noninvasive Methods in Cardiology*. Masaryk University, Brno, Czech Republic 2015; 9-18.
5. **Cornelissen G**, Otsuka K, Watanabe Y, Halberg Francine, Halberg J, Beaty L, Dusek J, Havelkova A, Siegelova J. Applications of chronobiologically-interpreted 7-day/24-hour ambulatory blood pressure monitoring: from health maintenance and primary prevention to chronotherapy. In: Kenner T, **Cornelissen G**, Siegelova J, Dobsak P. (Eds.) *Noninvasive Methods in Cardiology*. Masaryk University, Brno, Czech Republic 2015; 19-35.
 6. Brat K, Homolka P, **Cornelissen G**, Merta Z, Homolka M, Rihucek I, Sevcik P. Chronobiological analysis of changes in arterial blood pressure in participants of the 5th and 6th Czech Antarctic Scientific Expeditions. *Neuroendocrinol Lett* 2015; 36 (1): 80-83.
 7. Singh Ranjana, Sharma S, Singh RK, **Cornelissen G**. Circadian time structure of circulating plasma lipid components in healthy Indians of different age groups. *Ind J Clin Biochem* 2015 (published online September 18); doi: 10.1007/s12291-015-0591-8.
 8. Singh Ranjana, Singh Rajesh K, Tariq M, Tripathi AK, Ali MA, Singh Raj K, Schwartzkopff O, **Cornelissen G**. Circadian time structure of circulating plasma lipid peroxides, antioxidant enzymes and other small molecules in peptic ulcers. *Clin Chim Acta* 2015 (published online October 3): doi: 10.1016/j.cca.2015.09.033.
 9. Lee Gierke C, **Cornelissen G**. Chronomics analysis toolkit (CATkit). *Biological Rhythm Research* 2015 (published online 26 Oct): doi: 10.1080/09291016.2015.1094965.
 10. Lee Gierke C, Watanabe Y, Siegelova J, Dusek J, Otsuka K, **Cornelissen G**. Demonstration of cosinor-based analyses using the chronomics analysis toolkit in R. In: Kenner T, **Cornelissen G**, Siegelova J, Dobsak P. (Eds.) *Noninvasive Methods in Cardiology*. Masaryk University, Brno, Czech Republic 2015; 37-48.
 11. **Cornelissen G**, Lee Gierke C, Watanabe Y, Beaty LA, Siegelova J, Delcourt A, Deruyck C, Singh RB, Revilla MA, Otsuka K, on behalf of the Project on the BIOSphere and the COSmos (BIOCOS). Ambulatory blood pressure monitoring for clinical applications and basic science. *World Heart J* 2015; 7 (2): 107-117.

12. **Cornelissen G**, Watanabe Y, Otsuka K, Halberg F. Influences of space and terrestrial weather on human physiology and pathology. In: Rosch PJ. (Ed.) *Bioelectromagnetic and Subtle Energy Medicine*, 2nd ed. Boca Raton: CRC Press 2015; 389-400.
13. **Cornelissen G**. Prediction and prevention. *International Innovation* 2015; Issue 181: 77-79.

Additional titles published in 2015

14. Singh RB, **Cornelissen G**, Wilson DW, Dimitrov BD. Can Halberg's approach to chronotherapy improve world health? *Arch Med Sci* 2015; 11 (5): 3 pp.
15. Masood T, Kushwaha RS, Singh R, Sailwal S, Pandey H, Varma A, Singh RK, **Cornelissen G**. Circadian rhythm of serum 25 (OH) vitamin D, calcium and phosphorus levels in the treatment and management of type-2 diabetic patients. *Drug Discoveries & Therapeutics* 2015; 9 (1): 70-74. doi: 10.5582/ddt.2015.01002.
16. Cheng S, Jiang Z, Wang Z, **Cornelissen G**. Non-transcriptional/translational regulations of the circadian system. *Biological Rhythm Research* 2015; 46 (4): 471-481. doi: 10.1080/09291016.2015.1020203.
17. Kikuchi T, Okajima K, **Cornelissen G**, Sasaki J, Oinuma S, Yamanaka G, Okumiya K, Matsubayashi K, Yamanaka T, Otsuka K. Community-based comprehensive geriatric assessment of short- and long-term predictors of cognitive decline in elderly adults. *J Am Geriatrics Soc* 2015; 63 (5): 1031-1033.
18. Singh RB, Hristova K, Fedacko J, **Cornelissen G**. Eating behavior, appetite, and chronobiology [comment]
[http://www.cell.com/cell/comments/S0092-8674\(14\)01632-8](http://www.cell.com/cell/comments/S0092-8674(14)01632-8)
19. **Cornelissen G**, Beaty L, Lee Gierke C, Watanabe Y, Gumarova L, Sampson M, Hillman D, Schwartzkopff O, and Members of BIOCOS. Annual scientific report: Season's Appreciations. *Clin Ter* 2015; 166 (2): 55-58.
20. Siegelova J, Havelkova A, Dusek J, Dunklerova L, Pohanka M, Dobsak P, **Cornelissen G**. Seven-day ambulatory blood pressure monitoring at rest and during exercise: variability of night-to-day

- blood pressure ratio. In: Kenner T, **Cornelissen G**, Siegelova J, Dobsak P. (Eds.) *Noninvasive Methods in Cardiology*. Masaryk University, Brno, Czech Republic 2015; 69-77.
21. Siegelova J, Havelkova A, Dusek J, Pohanka M, Dunklerova L, Dobsak P, **Cornelissen G**. Seven day blood pressure variability at rest and during exercise in healthy men and patients. In: Kenner T, **Cornelissen G**, Siegelova J, Dobsak P. (Eds.) *Noninvasive Methods in Cardiology*. Masaryk University, Brno, Czech Republic 2015; 79-97.
 22. Shehab A, Elkilany G, Singh RB, Hristova K, Chaves H, **Cornelissen G**, Otsuka K. Coronary risk factors in South West Asia. *World Heart J* 2015; 7 (1): 21-30.
 23. Singh RB, Hristova K, Gligorijevic T, De Meester F, Saboo B, Elkilany G, Takahashi T, Mahashwari A, **Cornelissen G**, Hadi NR, Mohammad BI, Chibisov C, Abramova M, Shastun S. Can circadian restriction of feeding modulate autonomic nervous system dysfunction and cardiometabolic risk? *World Heart J* 2015; 7 (1): 31-41.
 24. Mikulecky M Sr, Gvozdjakova A, Kucharska J, Mojto V, Mikulecky M Jr, Singh RB, **Cornelissen G**. Are mitochondrial energetics in the rat under control of the solar (24 hours) and/or lunar (24.8 hours) day? *World Heart J* 2015; 7 (2): 119-127.
 25. Singh RB, **Cornelissen G**, Takahashi T, Shastun S, Hristova K, Chibisov S, Keim M, Abramova M, Otsuka K, Saboo B, Singh RK, Verma NS, Gvozdjakova A, Fedacko J, Pella D, Singh R, Maheshwari A, Pandey AK, Wilson DW. Brain-heart interactions and circadian rhythms in chronic heart failure. *World Heart J* 2015; 7 (2): 129-142.
 26. Singh RB, **Cornelissen G**, Gvozdjakova A, Fedacko J, Saboo B, Mahashwari A. Can Halberg's chronotherapy approach increase efficacy and safety of PCSK9 inhibitors and decrease their adverse effects? *World Heart J* 2015; 7 (3): 93-96.
 27. Fedacko J, Hristova K, Elkilany G, Sharma JP, **Cornelissen G**, Singh RB, Saboo B, Goyal RK. Study protocol for a new study: Can chronotherapy enhance efficacy and diminish adverse effects of PCSK9 inhibitors in the management of acute coronary syndromes? *World Heart J* 2015; 7 (3): 97-101.
 28. Hristova K, Singh RB, **Cornelissen G**, Fedacko J, Pella D, Chaves H,

- Elkilany G, Otsuka K, for the International College of Cardiology. *The challenges of new guidelines for management of hypertension: a view point of the International College of Cardiology. World Heart J* 2015; 7 (3): 103-107.
29. Gvozdjakova A, Kucharska J, Vancova O, Ulicna O, Mojto V, Singh RB, **Cornelissen G**. Mitochondrial coenzyme Q and oxidative phosphorylation in brain and myocardium of control and diabetic rats. *World Heart J* 2015; 7 (3): 119-129.
 30. Hristova K, Shehab A, **Cornelissen G**, Singh RB. (Eds.) *Circadian Cardiology with Focus on Both Prevention and Intervention*. New York: Nova Biomedical; 2015. 411 + xi pp.
 31. Hristova K, Shehab A, **Cornelissen G**, Singh RB. Preface. In: Hristova K, Shehab A, **Cornelissen G**, Singh RB. (Eds.) *Circadian Cardiology with Focus on Both Prevention and Intervention*. New York: Nova Biomedical; 2015. pp. ix-x.
 32. Lee JY, Lee MS, Lee JS, Halberg FE, Halberg J, Schwartzkopff O, **Cornelissen G**. In memoriam: a tribute to Franz Halberg, MD. *Hypertension* 2015; 66: 1090-1092.
<http://hyper.ahajournals.org/content/66/6/1090.full>; doi: 10.1161/HYPERTENSIONAHA.115.06338
 33. Chibisov S, Singh RB, Frolov V, Kharlitskaya E, Mamontov O, Dementyev M, Mitina E, Schwartzkopff O, **Cornelissen G**. G.S. Katinas (6 October 1925-4 September 2014). *World Heart J* 2015; 7 (1): 1-5.
 34. Uezono K, Otsuka K, Cugini P, Kawasaki J, Kawasaki M, **Cornelissen G**. Obituary: Terukazu Kawasaki (10 September 1936-13 May 2014). *Clin Ter* 2015; 166 (2): 74-81.
 35. **Cornelissen G**, Janashia K, Crosby NB, Babayev E, Ozguc A. Obituary: Marina Gigolashvili (1943-12-08 - 2014-10-22), Member of Editorial Board of *Sun and Geosphere*. *Sun and Geosphere* 2015; 10: 7-11.

Hinterlasse eine Antwort

Deine E-Mail-Adresse wird nicht veröffentlicht. Erforderliche Felder sind markiert

Name

E-Mail-Adresse

Website

Kommentar

Du kannst folgende HTML-Tags benutzen: `` `<abbr title="">` `<acronym title="">` `` `<blockquote cite="">` `<cite>` `<code>` `<del datetime="">` `` `<i>` `<q cite="">` `<s>` `<strike>` ``

Kommentar abschicken