

## Curriculum Vitae

Dr. rer. nat. Alexander Karabatsiakis  
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### Personal data

Date of Birth: 15.02.1979  
Place of Birth: Bad Pyrmont (State of Lower Saxony, Germany)  
Nationalities: German & Greek  
Family status: Married

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### Education

10/2007-04/2011 Ph.D. thesis at the Center for Systems Neuroscience (CSN), University of Veterinary Medicine, Hannover, Germany. Ph.D. project work was completed at the Center for Psychological Medicine, Hannover Medical School (MHH). Title of the work: “*Accelerated immunosenescence, the glia S100B protein and error-monitoring in remitted depression: A study to identify new candidates for state markers of depression*”, Ph.D. certificate in Systems Neuroscience in April 2011. Final degree: magna cum laude. Supervisors: Prof. Dr. Detlef E. Dietrich, Prof. Dr. Wolfgang Baumgärtner, Prof. Dr. Stephan Steinlechner. Cooperation partner: Prof. Dr. Lenhard Rudolph, Ulm University, Germany.

1999-/2006 Diploma in Biology, final degree of 1.7. Workgroup of Prof. Dr. Martin Bähler (Department of Zoology), University of Münster, Münster, Germany.

01/2004-10/2004 University of Alicante, Spain. Erasmus studies in the fields of zoology and planctology, Alicante, Spain.

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### Career history

Since 01/2020 Postdoctoral researcher at the Department of Clinical Psychology (Prof. Dr. Anna Buchheim), workgroup *Biomolecular Psychotraumatology*, Institute of Psychology, University of Innsbruck, Innsbruck, Austria.

07/2011-10/2019 Postdoctoral researcher and head of the biomolecular laboratories at the Department of Clinical & Biological Psychology (Prof. Dr. Iris-Tatjana Kolassa), workgroup *Biomolecular Psychotraumatology*, Institute of Psychology and Education, Ulm University, Germany.

04/2011-06/2011 Postdoctoral researcher at the Electrophysiology Laboratory at the AMEOS Clinics Hildesheim (Prof. Dr. Detlef E. Dietrich), Hildesheim, State of Lower Saxony, Germany.

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### Career-related activities and mobility

02/2020 Course on hypnosis with Prof. Walter Bongartz in Freiburg, Germany. Certificate for independent performance of hypnosis in the context of

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	scientific research.
01-02/2018	Workshop „Fit for teaching 1+2“, Baden-Württemberg Centre for Teaching and Learning including licensed evaluation of teaching skills in 07/19 in Ulm, <b>Germany</b> .
08/2017	Academia-industry cooperation with Agilent Technologies in Waldbronn, Baden-Wuerttemberg, <b>Germany</b> .
02-04/2016	Research stay at the <i>Translational Research Institute</i> (Prof. Dr. Michelle Hill), University of Queensland, Brisbane, <b>Australia</b> .
09/2014	O2K workshop on high-resolution respirometry (Oroboros Instruments), Schröcken, <b>Austria</b> .
04/2013	Research stay at the Environmental Research Institute (NERI) of the <i>National University of Singapore</i> (NUS), <b>Republic of Singapore</b> .
08/2012	Research stay at the National Cancer Centre Singapore (NCCS) at the National University Hospital (NUH) of Singapore, <b>Republic of Singapore</b> . Supervisor: Ph.D. Mac M.F. Ho. Research stay at the National University of Singapore (NUS), the <b>Republic of Singapore</b> .

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### Awards

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10/2007-10/2010	<b>Georg-Christoph-Lichtenberg Scholarship for Excellence</b> , funded by the State of Lower Saxony, Germany.
01/2004-10/2004	<b>Erasmus scholarship</b> , funded by the European Union.

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### Memberships

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- Austrian Society for Neuropsychopharmacology and Biological Psychiatry (ÖGPB)
  - Austrian representative of the European Depression Association (EDA)
  - Deutschsprachige Gesellschaft für Psychotraumatologie (DeGPT)
  - German Brain-Immune Network (GEBIN)
  - European Psychoneuroimmunology Network (EPN)
  - International Society for Psychoneuroendocrinology (ISPNE)
  - Deutsche Gesellschaft für Biologische Psychiatrie (DGBP)
  - Psychoneuroimmunology Research Society (PNIRS)
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### Important projects

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- Co-applicant for the SNF-funded project **CCO-NIRS** (Brain cytochrome-c-oxidase assessed by NIRS as a mitochondrial biomarker in depression) in collaboration with PD Dr. Lisa Holper, University Clinic of Psychiatry Zürich, Switzerland. Total funding: **554.400 CHF**.
  - Co-applicant of the BMBF-funded project **ENHANCE**: “Enhancing understanding and treatment of post-traumatic stress disorder related to child maltreatment“ (PTSD-CM), Total project funding: 3.230.312 €. Funding of the subproject B2 (Prof. Dr. Iris-Tatjana Kolassa, Dr. Alexander Karabatsiakis): **263.688 €**.
  - Conceptual contributor to the biomolecular analyses of the project **TRANSGEN** (Ulm University, Germany) investigating the intergenerational consequences of child abuse and neglect: Total funding: 1.732.512 €. Funding of the subproject (Prof. Dr. Iris-Tatjana Kolassa, Dr. Alexander Karabatsiakis): **746.620 €**.
  - The project **GERONTOTEL** investigated psychoneuroimmunological alterations in blood samples from depressed patients and non-depressed controls. The biomolecular analyses included telomere length, mitochondrial bioenergetics, metabolomics and lipidomics analyses as well as N-glycan profiling in blood serum.
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### Most important scientific/scholarly results achieved to date

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- Depression is associated with an impaired bioenergetic supply of immune cells due to changes in mitochondrial physiology, which might be applicable as a routine biomarker in clinical psychology and psychiatry indicating systemic impairments in mitochondrial functioning in MDD.
- *Biochemical fingerprinting*, an analytical procedure using mass spectrometry, revealed alterations in individuals with adverse childhood experiences (ACE) and patients with PTSD. Epidemiological research demonstrated a higher risk of PTSD in individuals with ACE, a link that could be demonstrated for the first time on a biochemical scale.
- Telomeres are capping structures of chromosomes and are used as biomolecular aging markers. Immune cells from patients with depression show an accelerated aging endophenotype, represented by accelerated telomere shortening. The difference in telomere length between depressed patients and non-depressed controls corresponds to up to 27.5 years of premature immunological aging.
- Child maltreatment (CM), which includes child abuse and neglect, is associated with psychoneuroimmunological and neuroendocrine alterations in individuals affected by CM. The same biological alterations (epigenetics, hair steroids and endocannabinoids, mitochondrial function in intact immune cells) cannot be confirmed in biosamples collected from newborns of mothers with CM. No intergenerational transmission of maternal trauma consequences was found in newborns on a biological scale.

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### Peer-reviewed publications (<sup>1</sup>shared authorship positions)

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2020:

- Ramo-Fernández, L., **Karabatsiakis**, A., Boeck, C., Koenig, A.M., Gump, A.M., Mavioglu, R.N., Ammerpohl, O., Kolassa, I.-T. (in press). Characterization of the effects of age and childhood maltreatment on ELOVL2 DNA methylation. *Development and Psychopathology*
- Gump, A., Boeck, C., Behnke, A., Bach, A.M., Ramo-Fernandez, L., Welz, T., Gündel, H., Kolassa, I.T. & **Karabatsiakis**, A., 2020. Childhood maltreatment is associated with changes in mitochondrial bioenergetics in maternal, but not in neonatal immune cells. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)* 117 (40):24778-24784. DOI:[10.1073/pnas.2005885117](https://doi.org/10.1073/pnas.2005885117)
- **Karabatsiakis**, A., Schönfeldt-Lecuona, 2020. Depression, mitochondrial bioenergetics, and electroconvulsive therapy: a new approach towards personalized medicine in psychiatric treatment - a short review and current perspective. *Translational Psychiatry*, 10(1):226. DOI:[10.1038/s41398-020-00901-7](https://doi.org/10.1038/s41398-020-00901-7)
- **Karabatsiakis**, A, Woike, K., Behnke, A., Kolassa, IT, Schoenfeldt-Lecuona, C., Kiefer, M., Sim, E., 2020. Testing the reversibility of impaired mitochondrial bioenergetic functioning in peripheral blood mononuclear cells from depressed patients by clinical-routine antidepressant treatment. *Journal of Psychosomatic Research* 133: 110086. DOI:[10.1016/j.jpsychores.2020.110086](https://doi.org/10.1016/j.jpsychores.2020.110086)
- **Karabatsiakis**, A., Todt, M., Salinas-Manrique, J., Buchheim, A., Dietrich, D., 2020. Comparison of hair cortisol concentrations between depressed patients, suicide completers, and control subjects: A predictive biochemical indicator for suicide risk in depression? *Journal of Psychosomatic Research* Volume 133, DOI:[10.1016/j.jpsychores.2020.110093](https://doi.org/10.1016/j.jpsychores.2020.110093)
- Schultchen, D., Kuchler, A-M., Schillings, C., Weineck, F., **Karabatsiakis**, A., Ebert, D.D., Baumeister, H., Pollatos, H., 2020. Effectiveness of a guided online mindfulness-focused

intervention in a student population: Study protocol for a randomized control trial. *BMJ Open*, 24;10(3):e032775. DOI:1136/bmjopen-2019-032775

- Hitzler, M., Karrasch, S., Gump, A. M., **Karabatsiakis**, A., Kolassa, I.-T., 2020. Molekular-toxische Folgen von chronischem und traumatischem Stress für die psychosomatische Gesundheit und deren Reversibilität durch Entspannungsverfahren. *Verhaltenstherapie*; 30(1): 29-43. DOI:10.1159/000505380
- Behnke, A., Rojas, R., **Karabatsiakis**, A., Kolassa, I.-T., 2020. Childhood maltreatment compromises resilience against occupational trauma exposure: A retrospective study among emergency medical service personnel. *Child Abuse & Neglect*, 99, e104248. DOI: 10.1016/j.chiabu.2019.104248

2019:

- **Karabatsiakis**<sup>1</sup>, A., Hitzler<sup>1</sup>, M., Kolassa, I.T., 2019. Biomolekulare Vulnerabilitätsfaktoren psychischer Erkrankungen. Einfluss von chronischem und traumatischem Stress auf Immunsystem, freie Radikale und Mitochondrien. *Der Psychotherapeut* 64: 329. DOI: 10.1007/s00278-019-0366-9
- Fischer, D., Messner, M., **Karabatsiakis**, A., Schillings, C. & Pollatos, O., 2019. Effects of an 8week body scan intervention on individually perceived psychological stress and related steroid hormones in hair. *Mindfulness*, 10: 2532-2543. DOI:10.1007/s12671-019-01222-7
- Nold, V., Sweatman, C., **Karabatsiakis**, A., Böck, C., Bretschneider, T., Lawless, N., FundelClemens, K., Kolassa, I.T., Allers, K.A., 2019. Activation of the Kynurenine Pathway and Mitochondrial Respiration to Face Allostatic Load in a Double-Hit Model of Stress. *Psychoneuroendocrinology* 107:148-159. DOI:10.1016/j.psyneuen.2019.04.006
- Ramo-Fernandez, L., Boeck, C., Koenig, A., Schury, K., Binder, E.B., Gündel, H., Fegert, J.M., **Karabatsiakis**, A., Kolassa, I.-T., 2019. The effects of childhood maltreatment on epigenetic regulation of stress-response associated genes: an intergenerational approach. *Scientific Reports* 9:983. DOI:1038/s41598-018-36689-2

2018:

- Geiger, M., Boeck, C., Koenig, A.M., Schury, K., Waller, C., Kolassa, S., **Karabatsiakis**, A., Kolassa, I.T., 2018. Investigating the effects of childhood maltreatment on proinflammatory signaling: The influence of cortisol and DHEA on cytokine secretion ex vivo. *Mental Health & Prevention* 13: 176-186. DOI:10.1016/j.mhp.2018.04.002
- **Karabatsiakis**, A., Schoenfeldt-Lecuona, C., 2018. Depressionen als Stoffwechselstörung: Die Rolle der Mitochondrien. *Nervenheilkunde* 37(12): 873-879.
- Koenig, A.M., Ramo-Fernandez, L., Boeck, C., Umlauf, M., Pauly, M., Binder, E.B., Kirschbaum, C., Gündel, H., **Karabatsiakis**, A., Kolassa, I.-T., 2018. Intergenerational gene x environment interaction of FKBP5 and childhood maltreatment on hair steroids. *Psychoneuroendocrinology* 5(92):103-112. DOI:1016/j.psyneuen.2018.04.002
- Conrad, C., Wilker, S., Schneider, A., **Karabatsiakis**, A., Pfeiffer, A., Kolassa, S., Freytag, V., Vukojevic, V., Vogler, C., Milnik, A., Papassotiropoulos, A., de Quervain, D.J.-F., Elbert, T., Kolassa, I.-T., 2018. Integrated genetic, epigenetic, and genes enrichment analyses identify NOTCH as a potential mediator for PTSD risk after trauma: Preliminary results from independent African cohorts. *Psychophysiology* e13288. DOI:10.1111/psyp.13288
- Böck, C., Gump, A.M., Calzia, E., Radermacher, P., Waller, C., **Karabatsiakis**, A., Kolassa, I.-T., 2018. The association between cortisol, oxytocin and immune cell

mitochondrial oxygen consumption in postpartum women with childhood maltreatment. *Psychoneuroendocrinology* 96:69-77. DOI:1016/j.psyneuen.2018.05.040

- Böck, C., Salinas-Manrique, J., Calzia, E., Radermacher, P., von Arnim, C. A. F., Dietrich, D.E., Kolassa, I.-T., **Karabatsiakis**, A., 2018. Targeting the association between telomere length and immuno-cellular bioenergetics in female patients with major depressive disorder. *Scientific Reports* 8(1): 9419. DOI:1038/s41598-018-26867-7
- Krause, S., Böck, C., Gump, A.M., Rottler, E., Schury, K., **Karabatsiakis**, A., Buchheim, A., Guendel, H., Kolassa, I.-T., Waller, C., 2018. Child maltreatment is associated with a reduction of the oxytocin receptor in peripheral blood mononuclear cells. *Frontiers in Psychology* 9:173. DOI:10.3389/fpsyg.2018.00173
- **Karabatsiakis**<sup>1</sup>, A., König<sup>1</sup>, A.M., Stoll, T., Wilker, S., Hennessy, T., Hill, M.M., Kolassa, I.T., 2018. Serum profile changes in postpartum women with a history of childhood maltreatment: a combined metabolite and lipid fingerprinting study. *Scientific Reports* (8):3468. DOI:1038/s41598-018-21763-
- König, A.M., Gao, W., Umlauf, M., Schury, K., Reister, F., Kirschbaum, C., **Karabatsiakis**, A., Kolassa, I.T., 2018. Altered hair endocannabinoid levels in mothers with childhood maltreatment and their newborns. *Biological Psychology* 135:93-101. DOI:1016/j.biopsycho.2018.03.006
- Böck, C., Pfister, S., Bürkle, A., Vanhooren, V., Libert, C., Salinas-Manrique, J., Dietrich, D.E., Kolassa, I.T., **Karabatsiakis**, A., 2018. Alterations of the serum N-glycan profile in female patients with Major Depressive Disorder. *Journal of Affective Disorders* (234):139-147. DOI:1016/j.jad.2018.02.082

#### 2017:

- Schury, K., König, A.M., Isele, D., Hulbert, A.L., Krause, S., Umlauf, M., Kolassa, S., Ziegenhain, U., **Karabatsiakis**, A., Reister, F., Guendel, H., Fegert, J.M., and Kolassa, I.-T., 2017. Alterations of hair cortisol and dehydroepiandrosterone in mother-infant-dyads with maternal childhood maltreatment. *BMC Psychiatry*, 17:213. DOI:1186/s12888-017-1367-2
- Küster, O.C., Laptinskaya, D., Fissler, P., Schnack, P., Zuegel, M., Nold, V., Thurm, F., Pleiner, S., **Karabatsiakis**, A., von Einem, B., Weydt, P., Liesener, A., Borta, A., Woll, A., Hengerer, B., Kolassa, I.-T., von Arnim, C.A.F., 2017. Novel Blood-Based Biomarkers of Cognition, Stress, and Physical or Cognitive Training in Older Adults at Risk of Dementia: Preliminary Evidence for a Role of BDNF, Irisin, and the Kynurenine Pathway. *Journal of Alzheimer's Disease*, 59(3):1097-1111. DOI:3233/JAD-17044
- Böck, C., Krause, S., **Karabatsiakis**, A., Schury, K., Gündel, H., Waller, C., Kolassa, I.-T., 2017. History of child maltreatment and telomere length in immune cells subsets: Associations with stress- and attachment-related hormones. *Development and Psychopathology*, 1-13. DOI:10.1017/S0954579417001055

#### 2016:

- Krause, S., Pokorny, D., Schury, K., Doyen-Waldeck, C., Hulbert, A.-L., **Karabatsiakis**, A., Kolassa, I.-T., Gündel, H., Waller, C., Buchheim, A., 2016. Effects of the Adult Attachment Projective Picture System on Oxytocin and Cortisol Blood Levels in Mothers. *Frontiers in Human Neuroscience*, 10:627. DOI:3389/fnhum.2016.00627
- Böck, C., König, A.M., Schury, K., Geiger, M.L., **Karabatsiakis**, A., Wilker, S., Waller, C., Gündel, H., Fegert, J.M., Calzia, E., Kolassa, I.T., 2016. Inflammation in adult women with a history of child maltreatment: The involvement of mitochondrial alterations and oxidative stress. *Mitochondrion*, 30:197-207. DOI:1016/j.mito.2016.08.006

- Wilker, S., Pfeiffer, A., Elbert, T., Ovuga, E., **Karabatsiakis**, A., Krumbholz, A., Thieme, D., Schelling, G., Kolassa, I.T., 2016. Endocannabinoid concentrations in hair are associated with PTSD symptom severity. *Psychoneuroendocrinology*, 67:198-206. DOI:10.1016/j.psyneuen.2016.02.010
- Linkus, B., Wiesner, D., Meßmer, M., **Karabatsiakis**, A., Scheffold, A., Rudolph, K.L., Thal, D., Weishaupt, J.H., Ludolph, A.C., Danzer, K.M., 2016. Telomere shortening leads to earlier age of onset in ALS mice. *Aging*, 8(2):282-393. DOI: 10.18632/aging.100904
- Krause, S., Hulbert, AL, Schury, K., Buchheim, A., **Karabatsiakis**, A., Kolassa, I.T., Guendel, H., Waller, C., 2016. Gradual Activation of the Binding System leads to increased Release of Oxytocin in Mothers: What Role an early Binding Traumatization plays? *Zeitschrift für Psychosomatische Medizin und Psychotherapie*, 61(1):74.

#### 2015:

- Brunner, R., Reichl, C., Bermpohl, F., Bertsch, K., Bock, J., Bödeker, K., Firk, C., Fuchs, A., Führer, D., Gröger, N., Heinz, A., Herpertz-Dahlmann, B., Herpertz, S. C., Dahmen, B., Hindi, Attar, C., Kluczniok, D., Konrad, K., Lehmkuhl, U., Möhler, E., Neukel, C., Reck, C., Resch, F., Rether, K., Zietlow, A.-L., Ziegenhain, U., Schury, K., **Karabatsiakis**, A., Braun, K., Gündel, H., Kindler, H., Buchheim, A., Meysen, T., Kolassa, I.T., Fegert, J. M., 2015. Mechanismen der transgenerationsübergreifenden Transmission belastender Kindheitserfahrungen. *Trauma und Gewalt*, Theoretischer Hintergrund, Forschungsdesigns und erste Ergebnisse zweier multizentrischer Studien in Deutschland, 2(9), 134-147.
- **Karabatsiakis**, A., Hamuni, G., Wilker, S., Kolassa, S., Renu, D., Kadereit, S., Schauer, M., Hennessy, T., & Kolassa, I.T., 2015. Metabolite profiling in posttraumatic stress disorder. *Journal of Molecular Psychiatry*, 3(1):2. DOI:10.1186/s40303-015-0007-3
- Böck, C., **Karabatsiakis**, A., Kolassa, I.T., 2014. Biologische Grundlagen der Depression – Mitochondriale Funktionalität als Ansatzpunkt. *Zeitschrift für Medizin-Ethik-Recht*, 2, Jg.5.

#### 2014:

- **Karabatsiakis**, A.<sup>1</sup>, Böck, C.<sup>1</sup>, Manrique, J.S., Kolassa, S., Calzia, E., Dietrich, D.E., & Kolassa, I.T., 2014. Mitochondrial respiration in peripheral blood mononuclear cells correlates with depressive subsymptoms and severity of major depression. *Translational Psychiatry*, 4, e397. DOI:10.1038/tp.2014.44
- **Karabatsiakis**, A., Kolassa, I.T., Kolassa, S., Rudolph, K.L., & Dietrich D.E., 2014. Telomere shortening in leukocyte subpopulations in depression. *BMC Psychiatry*, 14:192. DOI:10.1186/1471-244X-14-192

#### 2013:

- Hauer, D., Schelling, G., Gola, H., Campolongo, P., Morath, J., Roozendaal, B., Hamuni, G., **Karabatsiakis**, A., Atsak, P., Vogeser, M., Kolassa, I.T., 2013. Plasma Concentrations of Endocannabinoids and Related Fatty Acid Amides in Patients with Post-Traumatic Stress Disorder. *PLOS One*, 8(5), e62741. DOI:10.1371/journal.pone.0062741

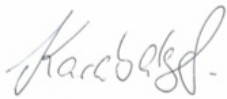
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#### **Peer-reviewing activities**

- *German-Israeli Foundation for Scientific Research and Development*
- *Brain, Behavior, and Immunity*
- *Psychoneuroendocrinology*
- *Journal of Alzheimer's Disease*
- *Mechanisms of Aging and Development*

- *OncoTargets and Therapy*
- *Journal of Traumatic Stress*
- *BMC Psychiatry*
- *IUBMB Life*

Innsbruck, 6<sup>th</sup> of November 2020

A handwritten signature in cursive script, appearing to read 'Karabatsiakis'.

Dr. Alexander Karabatsiakis