

1. Narrative academic profile (1400 words)

My academic profile covers multimodal brain mapping/imaging of developmental trajectories and plasticity in child and adolescent psychiatry. This involves- often longitudinal- studies of ADHD, reading acquisition and dyslexia, and aggression, a focus on malleable, disorder-specific and transdiagnostic pathophysiological brain mechanisms and biomarkers, and clinical translation into randomized controlled trials (RCTs) with personalized treatments using for example neurofeedback/biofeedback. The methods used beyond multimodal brain mapping/imaging include ecological and sleep regulation assessment, imaging genetics, gene x environment interactions, and meta-analyses. During the last two years (see my CIMH key output below), I concentrated on the mentoring, supervision and qualification of doctoral* and postdoctoral ** researchers through conceptually and clinically relevant work, often in a role as senior or shared senior author. This includes multicenter studies for subtyping of aggression and translation of neurophysiological/imaging and psychophysiological findings through RCTs *** of personalized non-pharmacological treatments using home based neurofeedback and biofeedback RCTs into clinical and home-settings, and multicenter Mannheim-Zurich and European network cooperations ****.

2. Key output of the years 2020-now (700 words)

Aggensteiner, P.-M.** , Albrecht, B., Strehl, U., Wörz, S., Freitag, C. M., Rothenberger, A., Gevensleben, H., Millenet, S., Hohmann, S., Ruckes, C., Banaschewski, T., Legenbauer, T., Holtmann, M., & Brandeis, D. (2021). Can Neurophysiological Markers of Anticipation and Attention predict ADHD severity and Neurofeedback Outcomes? *Biological Psychology*, 165, 108169.

*** *Partly predictive biomarkers for neurofeedback*

Aggensteiner, P.-M.** , Holz, N. E., Kaiser, A., Pernt, P. M., Boettinger, B., Baumeister, S., Werhahn, J., Walitza, S., Banaschewski, T., & Brandeis, D. (2022). Exploring psychophysiological indices of Disruptive Behavior Disorders and their subtypes of aggression. *International Journal of Psychophysiology*, 175, 24-31.

, * *Multimodal patterns support subtyping aggression*

Böttinger, B. W.* , Baumeister, S., Millenet, S., Barker, G. J., Bokde, A. L. W., Büchel, C., Quinlan, E. B., Desrivieres, S., Flor, H., Grigis, A., Garavan, H., Gowland, P., Heinz, A., Ittermann, B., Martinot, J.-L., Martinot, M.-L. P., Artiges, E., Orfanos, D. P., Paus, T., Poustka, L., Fröhner, J. H., Smolka, M. N., Walter, H., Whelan, R., Schumann, G., Banaschewski, T., Brandeis, D., Nees, F., & Consortium, I. (2021). Orbitofrontal control of conduct problems? Evidence from healthy adolescents processing negative facial affect. *European Child & Adolescent Psychiatry*. doi: 10.1007/s00787-021-01770-1

**** *Imaging nonlinear compensation and control correlates of conduct problems*

Holz, N. E.** , Häge, A., Plichta, M. M., Boecker-Schlier, R., Jennen-Steinmetz, C., Baumeister, S., Meyer-Lindenberg, A., Laucht, M., Banaschewski, T., & Brandeis, D. (2021). Early maternal care and amygdala habituation to emotional stimuli in

adulthood. *Social Cognitive and Affective Neuroscience*, 6(10), 1100-1110.
Linking maternal care during infancy to adult affective neuroimaging patterns

Kaiser, A.*, Aggensteiner, P.-M., Baumeister, S., Holz, N. E., Banaschewski, T., & Brandeis, D. (2020). Earlier versus later cognitive event-related potentials (ERPs) in Attention-Deficit/Hyperactivity Disorder (ADHD): A meta-analysis. *Neuroscience & Biobehavioral Reviews*, 112, 117-134.
First ERP meta-analysis in ADHD, critical subdivision by early/late components

Kaiser, A.*, Aggensteiner, P.-M.** , Holtmann, M., Fallgatter, A., Romanos, M., Abenova, K., Alm, B., Becker, K., Döpfner, M., Ethofer, T., Freitag, C. M., Geissler, J., Hebebrand, J., Huss, M., Jans, T., Jendreizik, L. T., Ketter, J., Legenbauer, T., Philipsen, A., Poustka, L., Renner, T., Retz, W., Rösler, M., Thome, J., Uebel-von Sandersleben, H., von Wirth, E., Zinnow, T., Hohmann, S.** , Millenet, S.** , Holz, N. E.** , Banaschewski, T., Brandeis, D., & on behalf of the ESCA-life-Consortium. (2021). EEG Data Quality: Determinants and Impact in a Multicenter Study of Children, Adolescents, and Adults with Attention-Deficit/Hyperactivity Disorder (ADHD). *Brain Sciences*, 11(2)
**** *First EEG multicenter quality control paper in ADHD across the life span*

Kaiser, A.*, Holz, N. E.** , Banaschewski, T., Baumeister**, S., Bokde, A. L. W., Desrivieres, S., Flor, H., Fröhner, J. H., Grigis, A., Garavan, H., Gowland, P., Heinz, A., Ittermann, B., Martinot, J.-L., Martinot, M.-L. P., Artiges, E., Millenet", S., Orfanos, D. P., Poustka, L., Schwarz, E., Smolka, M. N., Walter, H., Whelan, R., Schumann, G., Brandeis, D., & Nees, F. (2022). A developmental perspective on facets of impulsivity and brain activity correlates from adolescence to adulthood. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, in press.
**** *Longitudinal assessment of adolescent impulsivity facets and imaging correlates*

Purper-Ouakil, D., Blasco-Fontecilla, H., Ros, T., Acquaviva, E., Banaschewski, T., Baumeister, S.** , Bousquet, E., Bussalbi, A., Delhaye, M., Delorme, R., Drechsler, R., Goujon, A., Häge**, A., Kaiser, A.*, Mayaud, L., Mechler**, K., Menache, C., Revol, O., Tagwerker, F., Walitza, S., Werling, A., Bioulac, S., & Brandeis, D. (2022). Personalized at-home neurofeedback compared to long-acting methylphenidate in children with ADHD: NEWROFEED, a European randomized non-inferiority trial. *Journal of Child Psychology and Psychiatry*, 63(2), 187-198.
, * *Personalized home neurofeedback RCT indicating inferiority to optimized stimulant treatment*

Rubia, K., Westwood, S., Aggensteiner, P. M.** , & Brandeis, D. (2021). Neurotherapeutics for Attention Deficit Hyperactivity Disorder (ADHD): a review. *Cells*, 10(8), 2156.
*** *Timely review of active and passive neuromodulation findings in ADHD*

Werhahn, J. E.*, Mohl, S., Willinger, D., Smigielski, L., Roth, A., Hofstetter, C., Stämpfli, P., Naaijen, J., Mulder, L. M., Glennon, J. C., Hoekstra, P. J., Dietrich, A., Kleine Deters, R., Aggensteiner, P. M., Holz, N** , Baumeister, S** , Banaschewski, T., Saam, M. C., Schulze, U. M., Lythgoe, D. J., Sethi, A., Craig, M. C., Mastroianni, M., Sagar-Ouriaghli, I., Santosh, P., Rosa, M., Bargallo, N., Castro-Fornieles, J., Arango, C., Penzol, M. J., Zwiers, M. P., Franke, B., Buitelaar, J. K., Walitza, S., & Brandeis, D.

(2021). Aggression subtypes relate to distinct resting state functional connectivity in children and adolescents with disruptive behavior. *European Child & Adolescent Psychiatry*, 30(8), 1237-1249.

**** *Multicenter imaging of aggression subtypes at rest*