C U R R I C U L U M V I T A E

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Born on 03.03.1981 in Moscow, Russia
German citizen | US permanent resident

Employment

2014 –	Assistant Professor of Chemistry and Biochemistry, UC Santa Cruz

Education

2009 – 2014	Humboldt Postdoctoral Fellow at California Institute of Technology (Prof. Dervan)
2006 – 2009	DPhil in Organic Chemistry at the University of Oxford (Prof. Brown)
2001 – 2006	Diploma in Chemistry from the University of Heidelberg (Prof. Helmchen)

Prizes and Fellowships

2016 – 2017	Hellman Young Investigator Award; selected as Featured 2016 UC Santa Cruz Fellow
2009 – 2011	Feodor Lynen postdoctoral fellowship (A. v. Humboldt foundation)
2007 – 2008	Wadham College Senior Scholarship (Oxford)
2007 – 2008	PhD fellowship of the „Fonds der Chemischen Industrie“ (FCI)
2007	Recipient of a Pollard Fund grant (Wadham College, Oxford)
2006	Doctoral fellowship for the participation at the EUROMAR conference
2006	Special fellowship of the „Studienstiftung des Deutschen Volkes“ to participate at the XII ICQC conference (Kyoto, Japan)
2005	Dr. Sophie Bernthsen Fellowship (Heidelberg)
2005	Special fellowship of the „Studienstiftung des Deutschen Volkes“ to study in Oxford
2004 – 2006	Fellow of the „Studienstiftung des Deutschen Volkes“
2003	Third prize in the final phase of the Start2grow business plan competition
2003	Prize in the preliminary phase of the Start2grow business plan competition
2001 – 2005	E-fellow (McKinsey)
2001	Finalist of the German research competition “Jugend Forscht”, winning three prizes.
2001 – 2003	Undergraduate fellowship of „Fonds der chemischen Industrie“ (FCI)
2001	Best chemistry final school leaving exam (Abitur)
2000	Winner of a prize of the German Chemistry Olympiad in Baden Wurttemberg
2000	Finalist of the German Chemistry Olympiad selection

Publications

As Assistant Professor at UC Santa Cruz

[31] Addition of mirror-image Aβ42 to the natural L-enantiomer suppresses oligomer formation and yields non-toxic fibrils
S. Dutta, C. J. A. Warner, A. R. Foley, J. A. Raskatov*
Angew. Chem. Int. Ed. **2017**, *DOI: 10.1002/anie.201706279*.
Selected as **V**ery **I**mportant **P**aper

[30] A tailored HPLC purification protocol that yields high-purity amyloid beta 42 and amyloid beta 40 peptides, capable of oligomer formation
C. J. A. Warner, S. Dutta, A. R. Foley, J. A. Raskatov*
J. Vis. Exp **2017**, *e55482*.

[29] Using Chiral Peptide Substitutions to Probe the Structure Function Relationship of a Key Residue of Aβ42
C. J. A. Warner, S. Dutta, A. R. Foley, E. Chen, D. Kliger, J. A. Raskatov*
Chirality **2017**, *29*, 5-9.

[28] Introduction of D-glutamate at a critical residue of Aβ42 stabilizes a pre-fibrillary aggregate with enhanced toxicity
C. J. A. Warner, S. Dutta, A. R. Foley, J. A. Raskatov*
Chem. Eur. J. **2016**, *22*, 11967-11970; *ibid.* 11874 (Journal inside cover).
For media highlights, see https://wiley.altmetric.com/details/8649725/news

[27] Strict Regio-specificity of Human Epithelial 15-Lipoxygenase-2 Delineates its Trans-cellular Synthesis Potential
A. R. Green, S. Barbour, T. Horn, J. Carlos, J. A. Raskatov, T. R. Holman
Biochemistry **2016**, *55*, 2832-2840.

[26] 4-Azidobenzyl Ferrocenylcarbamate as an Anticancer Prodrug Activated at Reductive Conditions
E. Kinski, P. Marzenell, W. Hofer, J. A. Raskatov, K. X. Knaup, E. M. Zolnhofer, K. Meyer, A. Mokhir
J. Inorg. Biochem. **2016**, *160*, 218-224.

[25] Genome-directed lead discovery: biosynthesis, structure elucidation, and biological evaluation of two families of polyene macrolactams against *Trypanosoma brucei*
C. J. Schulze, M. S. Donia, J. L. S. Neto, D. Ray, J. A. Raskatov, R. E. Green, J. H. McKerrow, M. A. Fischbach, R. G. Linington
ACS Chem. Biol. **2015**, *10*, 2373-2381.

As Postdoctoral Scholar and PhD Student

[24] An HRE-binding Py-Im polyamide impairs hypoxic signaling in tumors
J. O. Szablowski, J. A. Raskatov, P. B. Dervan.
Mol. Cancer Ther. **2016**, *15*, 608-617.
Highlighted in Mol. Cancer. Ther. ***2016****, 15, 531.*

[23] Tumor Xenograft Uptake of a Py-Im Polyamide Varies as a Function of Cell Line Grafted: a C-14 Study
J. A. Raskatov, J. O. Szablowski, P. B. Dervan.
J. Med. Chem. **2014**, *57*, 8471-8476.

[22] A C-14 Labeled Py-Im Polyamide Localizes to a Subcutaneous Prostate Cancer Tumor
J. A. Raskatov, J. W. Puckett, P. B. Dervan.
Bioorg. Med. Chem. **2014**, *22*, 4371-4375.

[21] Chiral Recognition in Contact Ion-pairs; Observation, Characterization and Analysis
J. A. Raskatov, A. L. Thompson, A. R. Cowley, T. D. W. Claridge, J. M. Brown
Chem. Sci. **2013**, *4*, 3140-3147.

[20] Activity of a Py-Im Polyamide Targeted to the Estrogen Response Element
N. G. Nickols, J. O. Szablowski, A. E. Hargrove, B. C. Li, J. A. Raskatov, P. B. Dervan
Mol. Cancer. Ther., **2013**, *12*, 675-684.

[19] Gene Expression Changes in a Tumor Xenograft by a Py-Im Polyamide
J. A. Raskatov, N. G. Nickols, A. E. Hargrove, G. K. Marinov, B. Wold, P. B. Dervan
Proc. Natl. Acad. Sci. USA **2012**, *109*, 16041-16045.

[18] Iridium-Catalyzed Allylic Substitutions with Cyclometallated Phosphoramidite Complexes Bearing a Dibenzocyclooctatetraene Ligand - Preparation of (π-Allyl)Ir Complexes, Computational and NMR-Spectroscopic Studies
J. A. Raskatov, M. Jaekel, B. Straub, F. Rominger, G. Helmchen
Chem. Eur. J. **2012**, *18*, 14314-14328.
Highlighted in Angew. Chem. Int. Ed. ***2012****, 124, 11356-11358.*

[17] Characterization and solubilization of pyrrole-imidazole polyamide aggregates
A. E. Hargrove, J. A. Raskatov, J. L. Meier, D. Montgomery, P. B. Dervan
J. Med. Chem. **2012**, *55*, 5425-5432.

[16] Pharmacokinetics of Py-Im Polyamides Depend on Architecture: Cyclic versus Linear
J. A. Raskatov, A. E. Hargrove, A. Y. So , P. B. Dervan
J. Am. Chem. Soc. **2012**, *134*, 7995-7999.

[15] Modulation of NF-κB-Dependent Gene Transcription Using Programmable DNA Minor Groove Binders
J. A. Raskatov, J. L. Meier, J. W. Puckett, F. Yang, P. Ramakrishnan, P. B. Dervan
Proc. Natl. Acad. Sci.USA **2012**, *109*, 1023-1028.

[14] The origins of enantioselectivity in Rh-diene complex catalysed arylation of cyclohex-2-enones
S. Gosiewska, J. A. Raskatov, R. Shintani, T. Hayashi, J. M. Brown
Chem. Eur. J. **2012**, *18*, 80-84.

[13] Expanding the Repertoire of Natural Product-Inspired Ring Pairs for Molecular Recognition of DNA
K. A. Muzikar, J. L. Meier, D. A. Gubler, J. A. Raskatov, P. B. Dervan
Org. Lett. **2011**, *13*, 5612-5615.

[12] Effects of Substituents on the Regioselectivity of Palladium-Catalysed Allylic Substitutions - A DFT Study
J. A. Raskatov, G. Helmchen
Modeling of Molecular Properties, First Edition. Edited by Peter Comba; Wiley-VCH **2011**, pp 191-206.

[11] Chiral Selection in the Formation of Borates From Racemic Binaphthols and Related Diols
J. A. Raskatov, A. L. Thompson, J. M. Brown
Cryst. Eng. Comm. **2011***, 13*, 2923-2929.

[10] Exploring the Reactions of CO_2 with PCP Supported Nickel Complexes
T. J. Schmeier, N. Hazari, C. D. Incarvito, J. A. Raskatov
Chem. Commun. **2011***, 47*, 1824-1826.

[9] Asymmetric Catalysis with 7-Ring Chelate Diphosphines: DIOP, BINAP and Conformational Mobility
J. A. Raskatov, A. L. Thompson, J. M. Brown
Tetrahedron Asymm. **2010***, 21,* 1737-1744.

[8] Ir-Catalyzed Asymmetric Allylic Substitutions with Cyclometallated (Phosphoramidite)Ir-Complexes – Resting States, Catalytically Active (π-Allyl)Ir-Complexes and Computational Exploration
J. A. Raskatov, S. Spiess, C. Gnamm, K. Broedner, F. Rominger, G. Helmchen
Chem. Eur. J. **2010**, *16*, 6601-6615.

[7] Determination of the Conformation of the Key-Intermediate of an enantioselective Pd-catalysed allylic substitution from residual dipolar couplings
B. Boettcher, V. Schmidts, J. A. Raskatov, C. M. Thiele
Angew. Chem. Int. Ed. **2010**, *49*, 205-209.

[6] Ir-Catalyzed Asymmetric Allylic Substitutions with (Phosphoramidite)Ir-Complexes – Resting States, Synthesis und Characterization of Catalytically Active (π-Allyl)Ir-Complexes
S. Spiess, J. A. Raskatov, C. Gnamm, K. Broedner, G. Helmchen
Chem. Eur. J. **2009**, *15*, 11087-11090.

[5] CpCo Mediated Reactions of Cyclopropenones: A DFT Study
D. B. Werz, G. Klatt, J. A. Raskatov, H. Koeppel, R. Gleiter
Organometallics **2009**, *28*, 1675-1682.

[4] Synthesis and rhodium complexation of enantiomerically pure bicyclo[3.3.1]nona-2,6-diene
M. Mayr, C. Bataille, S. Gosiewska, J. A. Raskatov, J. M. Brown
Tet. Asymm. **2008**, 19, 1328-1332.

[3] DFT Calculations on [6.8]Cyclacenes and CpCo-Capped [4.8]Cyclacenes
B. Esser, J. A. Raskatov, R. Gleiter
Org. Lett. **2007**, *9*, 4037-4040.

[2] Thin-layer Chromatography Analysis of Lipids (Dünnschichtchromatographische Analyse von Lipiden)
T. Appel, G. Gellermann, C. Leisner, T. Lütkepohl, J. A. Raskatov, J. Rossa
a) *GIT Laborfachzeitschrift* **2003**, 1140-1142; b) *GIT LaborMedizin & Diagnostik* **2004**, 16-17.

[1] Quantitative Lipid Analysis via High Performance Thin-Layer Chromatography (Quantitative Analyse von Lipiden durch hochauflösende Dünnschichtchromategraphie)
J. A. Raskatov, J. Rossa, T. Appel
Chemie in Labor und Biotechnik **2002**, *7*, M49-M55.

h-index: **13** (Web of Knowledge, 17 April 2017)
13 (Google Scholar, 17 April 2017)

Patents

[4] Chiral Conversion of Amyloid Proteins Associated with Diseases
J. A. Raskatov
Publication Number WO 2017/035472
International Application Serial No. PCT/US2016/048993
Published on 02 March 2017

[3] System for thin-layer chromatography
T. R. Appel, J. A. Raskatov, J. Rossa
WO 2004111634 A1, published on 23 December 2004

[2] Arrangement for improving the thin-layer chromatographic analysis
T. R. Appel, J. A. Raskatov, J. Rossa
DE 10209159 B4, published on 24 June 2004

[1] Thin layer chromatography volume-stable standard lipid solution comprises lipid dissolved in solvent pair selected from chlorinated hydrocarbon and alcohol
T. R. Appel, J. A. Raskatov, J. Rossa
DE 10209158 A1, published on 11 September 2003

Invited Talks

As Assistant Professor at UC Santa Cruz

[43] Chirality, Alzheimer's Disease and Amyloid beta. Saarland University.
20 July 2017, Saarbruecken, Germany.

[42] Chirality as a Probe of Structure and Function of Amyloid Beta.
Regenerative Medicine Center Utrecht.
24 April 2017, Utrecht, Netherlands.

[41] Introduction of D-glutamate at a key site of Aβ42 stabilizes a soluble aggregation intermediate and enhances toxicity.
253rd ACS National Meeting, San Francisco.
03 April 2017, San Francisco, California, USA.

[40] Enantiomers, Racemates and Amyloid Beta.
Biophysics of Amyloid Formation, Ulm University.
08 March 2017, Ulm, Germany.

[39] Chirality as a Probe of Structure and Function of Amyloid Beta. DZNE.
28 September 2016, Bonn, Germany.

[38] Chirality as a Probe of Structure and Function of Amyloid Beta. Tel Aviv University.
21 September 2016, Tel Aviv, Israel.

[37] Chirality as a Probe of Structure and Function of Amyloid Beta. Weizmann Institute of Science.
20 September 2016, Rehovot, Israel.

[36] Introduction of D-glutamate at residue 22 of Aβ42 stabilizes a soluble aggregation intermediate with enhanced toxicity. Cedar-Sinai Medical Center.
09 September 2016, Los Angeles, USA

[35] Chirality as a Probe of Structure and Function of Amyloid Beta. University of Bristol.
05 August 2016, Bristol, UK.

[34] Chirality as a Probe of Structure and Function of Amyloid Beta. University of Oxford.
03 August 2016, Oxford, UK.

[33] Introduction of D-glutamate at a critical residue of Aβ42 stabilizes a pre-fibrillary aggregate with enhanced toxicity. Chirality 2016. 24 July 2016, Heidelberg, Germany

[32] A toxic pre-fibrillary aggregate of Aβ42 trapped through chiral inversion at a critical residue ISACS19, Challenges in Organic Chemistry. 23 March 2016, Irvine, USA

[31] A toxic pre-fibrillary aggregate of Aβ42 trapped through chiral inversion at a critical residue Presentation to the research lab of Dr. Daniel Madison, Stanford University,
14 March 2016, Palo Alto, USA

[30] A toxic pre-fibrillary aggregate of Aβ42 trapped through chiral inversion at a critical residue Presentation to the research lab of Dr. Charles Glabe, UC Irvine,
22 March 2016, Irvine, USA

[29] A toxic pre-fibrillary aggregate of Aβ42 trapped through chiral inversion at a critical residue Dervan Anniversary Symposium, 12 March 2016,
California Institute of Technology,Pasadena, USA

[28] A single chiral inversion within the Aβ42 framework induces a distinct aggregation profile. 05 February 2016. UCLA Neurology, USA

[27] Minute Modifications of Alzheimer's Aβ Induce Distinct Aggregation Profiles.
13 November 2015. University of Ulm, Germany.

[26] Minute Modifications of Alzheimer's Aβ Induce Distinct Aggregation Profiles.
11 November 2015. University College London, England.

[25] Minute Modifications of Alzheimer's Aβ Induce Distinct Aggregation Profiles. 09 November 2015. University of Heidelberg, Germany.

[24] Minute Modifications of Alzheimer's Aβ Induce Distinct Aggregation Profiles. 05 November 2015. University of Erlangen, Germany.

<u>As Postdoctoral Scholar and PhD Student</u>

[23] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (December 2013). GeorgiaTech, USA.

[22] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (November 2013). UC Santa Cruz, USA.

[21] From Chiral Ion Pairing to DNA-Recognition and *In Vivo* Experiments. Raskatov, J. A., Brown, J. M., Dervan, P. B. (July 2013). Technical University Munich, Germany.

[20] Disease-Oriented Chemical Biology: Creating Novel Molecular Therapeutic Strategies Raskatov, J. A., Dervan, P. B. (July 2013). Bonn University, Germany.

[19] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (July 2013). Tel Aviv University, Israel.

[18] Disease-Oriented Chemical Biology. Raskatov, J. A. (June 2013). University College London, UK.

[17] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (April 2013). Marburg University, Germany.

[16] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (April 2013). 245th National Spring Meeting of the American-Chemical-Society (ACS), New Orleans, USA.

[15] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (February 2013). UI Chicago, USA.

[14] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (January 2013). UC San Diego, USA.

[13] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (December 2012). VirginiaTech, USA.

[12] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. | Chemical Biology of Age-Related Disease. Raskatov, J. A., Dervan, P. B. (November 2012). Max Planck Institute for Biology of Ageing, Cologne, Germany.

[11] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (November 2012). University of Cambridge, England.

[10] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (November 2012). Weizmann Institute of Science, Rehovot, Israel.

[9] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (May 2012). Weizmann Institute of Science, Rehovot, Israel.

[8] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (May 2012). ETH Zuercih, Switzerland.

[7] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (May 2012). University of Zuerich, Switzerland.

[6] Py-Im Polyamides – From DNA Recognition to *In Vivo* Experiments. Raskatov, J. A., Dervan, P. B. (May 2012). University of Heidelberg, Germany.

[5] Rational Design of Chiral Ionic Recognition for Asymmetric Catalysis. Raskatov, J. A., Thompson, A. L., Brown, J. M. (August 2009). RWTH Aachen, Germany.

[4] Rational Design of Chiral Ionic Recognition for Asymmetric Catalysis. Raskatov, J. A. ,

Thompson, A. L., Brown, J. M. (August 2009). Max-Planck-Institut für Kohlenforschung, Mühlheim an der Ruhr, Germany.

[3] Rational Design of Chiral Ionic Recognition for Asymmetric Catalysis. Raskatov, J. A. , Thompson, A. L., Brown, J. M. (June 2009). Tokyo Institute of Technology, Japan.

[2] Rational Design of Chiral Ionic Recognition for Asymmetric Catalysis. Raskatov, J. A., Thompson, A. L., Brown, J. M. (July 2008). 38th international conference on coordination chemistry. Jerusalem, Israel.

[1] Rational Design of Chiral Ionic Recognition for Asymmetric Catalysis. Raskatov, J. A., Thompson, A. L., Brown, J. M. (July 2008). Weizmann Institute of Science.

Poster presentations

[3] Raskatov, J. A. (February 2016). Poster. Gordon Research Conference, Chemistry and Biology of Peptides.

[2] Raskatov, J. A., Claridge, T. D. W., Odell, B., Xu, Y., Brown, J. M. (2006). Poster. EUROMAR, A European magnetic resonance meeting. York, UK.

[1] Raskatov, J. A., Helmchen, G. (2006). Poster. XIIth international congress of quantum chemistry. Kyoto, Japan.

Local Lectures and Outreach Activities

[13] Enantiomers, Racemates and Amyloid Beta.
Somagenics, Santa Cruz (02 June 2017)

[12] Schnittke's Ninth Symphony as a Unique Bridge between Music and Stroke
The Darling House Salon: Music and the Mind, Santa Cruz (20 May 2017)

[11] Chirality, Alzheimer's and Amyloid beta
Lifelong Learners Lecture Series, Santa Cruz (02 April 2017)

[10] Alzheimer's Disease: Clues to Toxic Forms of Amyloid Beta. **Outreach lecture**
ACCESS outreach seminar series, Cabrillo College (21 October 2016).

[9] Chirality as a Subtle Probe of Structure and Function of Amyloid beta
UCSC Faculty Evening Research Talks (18 October 2016)

[8] Alzheimer's Disease - Introducing the Chemical Electrophysiology Approach
Science, Engineering and Technology Association, Scotts Valley (13 May 2016)

[7] Alzheimer's, Diabetes, and How Chemical Biology May Contribute.
UCSC Chemistry and Biochemistry Seminar Series (02 October 2015)

[6] Alzheimer's, Diabetes, and How Chemical Biology May Contribute.
UCSC BME Lecture Series (24 September 2015)

[5] Alzheimer's, Diabetes, and How Chemical Biology May Contribute.
UCSC ACCESS workshop (20 March 2015)

[4] Novel Molecular Approaches to Inhibit NF kappa B
UCSC Chemistry and Biochemistry Seminar Series (12 December 2014)

[3] Novel Molecular Approaches to Inhibit NF kappa B
UCSC BME Lecture Series (13 November 2014)

[2] Chiral inactivation of amyloid diseases: A molecular hypothesis
UCSC PBSE Retreat (17 September 2014)

[1] Chiral inactivation of amyloid diseases: A molecular hypothesis.
UCSC Chemistry Retreat (16 September 2014)

Activities as a Judge at Student Symposia

[4] Invited judge at the Chemical Biology Bay Area Symposium
(30 April 2016, UC Berkeley)

[3] Invited judge at the UC LEADS Research and Leadership Symposium
(06 March 2016, UC Davis)

[2] Invited judge at the Chemical Biology Bay Area Symposium
(07 June 2015, UCSF)

[1] Invited judge at the UC LEADS Research and Leadership Symposium
(21 March 2015, UC Merced)