

## **Brian S. DeDecker, PhD**

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### **Personal Data**

Address: University of Colorado at Boulder  
MCD Biology  
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### **Education**

1991 **BS**, The University of Illinois (UIUC), Urbana, IL  
Research Advisor: Klaus Schulten, PhD  
(deceased)

1997 **PhD**, Yale University, New Haven, CT  
Department of Molecular Biophysics and Biochemistry  
Research Advisor: Paul B. Sigler, MD, PhD  
(deceased)

### **Academic Employment History**

#### **Faculty Appointment**

2015 - present Director of Undergraduate Research  
Senior Instructor  
University of Colorado at Boulder  
MCD Biology Department

2006 - 2014 Assistant Research Professor  
University of Colorado at Boulder  
MCD Biology Department

#### **Independent Fellow**

1999 – 2006 Harvard Institute of Chemistry and Cell Biology (ICCB)  
Harvard Medical School, Boston, MA  
Institute Co-director: Timothy J. Mitchison, PhD  
Project Collaborator: Spyros Artavanis-Tsakonas, PhD  
Project Collaborator: Don C. Wiley, PhD  
(deceased)

#### **Post-Doctoral Research**

1997 - 1999 Cambridge Centre for  
Protein Engineering, MRC Centre  
University of Cambridge, Cambridge, England  
Faculty Sponsor: Sir Alan R. Fersht, PhD

## **Service**

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Department:

- 2017 - 2019 Co-Director of the Beckman Scholars Program
- 2015 - 2019 Chair of MCDB Scholarship Committee
- 2015 - 2019 Member of UGCOM Committee
- 2015 - 2018 Chair of Honors Committee
- 2008 - 2012 Member and Co-Chair of the Graduate Recruitment Committee
- 2010 Member of the Graduate Qualifying Exam Committee

## **Fellowships, Honors and Awards**

- 1997 Hitchings-Elion Post-doctoral Fellowship (Burroughs Wellcome Fund)
- 1996 Nominated Speaker - Yale University  
Graduate Student Research Symposia
- 1991 Pre-doctoral Training Grant (National Institute of Health)
- 1990 Howard Hughes Undergraduate Research Award

## **Grants**

Beckman Scholars University Grant  
Support for undergraduate researchers across campus  
\$156,000, (2017 - 2020) (Co-Director)

NIH R03  
"Unglued Glia, a Seven Transmembrane Protein Essential for Glia Differentiation"  
\$100,000 total direct costs, NS075458-01, (2011 - 2012) (PI)

Proof of Concept Grant  
(Technology Transfer Office, University of Colorado)  
"A therapeutic antibody that strips autoantigenic peptides from class II MHC",  
\$23,401 total award, (2008) (PI)

Juvenile Diabetes Research Foundation (JDRF) innovative grant  
"A therapeutic antibody that strips peptide from class II MHC",  
\$110,000 total award, (2007 - 2008) (PI)

Juvenile Diabetes Research Foundation  
(JDRF) International Research Grant, (2002) (Co-PI)

## Teaching

### **Classroom teaching:**

- 2018            **Instructor.** Honors Science Communication Course, CU-Boulder,  
upper division undergraduate course  
designed and taught course (6-10 students)  
1 full semester
- 2015 - 2018    **Instructor.** Introduction to Molecular Biology, CU-Boulder,  
lower division undergraduate course  
designed and taught course (60-70 students)  
3 full semesters
- 2008 - 2018    **Instructor.** Evolution and Development, CU-Boulder,  
upper division undergraduate course  
designed and taught course (20-30 students)  
8 full semesters
- 2008 - 2014    **Instructor.** Graduate Core Course (statistics section), CU-Boulder,  
designed and taught lectures on statistics (12-20 students)  
2 lectures per semester (7 semesters)
- 2011 - 2013    **Instructor.** Graduate Core Course (development section), CU-Boulder,  
designed and taught lectures on development (12-20 students)  
2 lectures per semester (3 semesters)
- 2013            **Instructor.** Graduate Methods and Logic, CU-Boulder,  
survey of current literature course  
designed and taught (12-20 students)  
1 half semester
- 1995 - 1997    **Teaching Assistant.** Biochemistry, Yale University  
undergraduate course  
led sections of larger class (30-40 students)  
2 semesters as teaching assistant

### **Non classroom teaching:**

- 2016-2018    **Team Director.** iGem (international Genetically engineered machines)  
Mentored the University's iGem team  
(6-10 undergraduates per year)

## **Publications**

### **Publications as Faculty (University of Colorado):**

**Brian S. DeDecker** (2017). The Polymerase Step Reaction (PSR) Method for Gene and Library Synthesis. *Methods in Molecular Biology* 1472, 129-138  
Chapter in Methods in Molecular Biology Series (Synthetic DNA)

Zhou-Bin Lee, Christopher Firnhaber, Jesse Clarke and **Brian S. DeDecker\*** (2015).  
Gene and library synthesis without amplification: polymerase step reaction (PSR).  
*BioTechniques* 59:3, 163-166

\* Corresponding Author

Philippos Mourikis, Robert J. Lake, Christopher B. Firnhaber and **Brian S. DeDecker\***  
(2010). Modifiers of Notch Transcriptional Activity Identified by Genome-Wide  
RNAi. *BMC Developmental Biology* 10:107

\* Corresponding Author

### **Publications as an Independent Fellow at the ICCB (Harvard University):**

Stephen L. De Wall, Corrie Painter, Jennifer D. Stone, Rajintha Bandaranayake, Don C.  
Wiley, Timothy J. Mitchison, Lawrence J. Stern and **Brian S. DeDecker\*** (2006).  
Noble metals strip peptides from class II MHC proteins. *Nature Chemical Biology* 2,  
197-201

\* Corresponding Author

News and Views: *Nature Chemical Biology* 2, 178-179  
Featured in *The Economist* magazine, March 2<sup>nd</sup>, 2006  
Faculty of 1000 article factor (FFa): 14

Natarajan Venkatesh, Yan Feng, **Brian DeDecker**, Patrick Yacono, David Golan,  
Timothy Mitchison and Frank McKeon (2004). Chemical genetics to identify NFAT  
inhibitors: Potential of targeting calcium mobilization in immunosuppression.  
*Proc. Natl. Acad. Sci. USA* 101, 8969-8974

Review Article:

**Brian S. DeDecker** (2000). Allosteric drugs: thinking outside the active-site box.  
*Chemistry & Biology* 7, 103-107

**Publications as a Postdoctoral Fellow with Sir Alan Fersht, PhD  
(University of Cambridge):**

Assaf Friedler, **Brian S. DeDecker**, Stefan M. V. Freund, Caroline Blair, Stefan Rüdiger and Alan R. Fersht (2004). Structural Distortion of p53 by the Mutation R249S and its Rescue by a Designed Peptide: Implications for "Mutant Conformation". *Journal of Molecular Biology* 336, 187-196  
Faculty of 1000 article factor (FFa): 11

Penka V. Nikolova, Kam-Bo Wong, **Brian S. DeDecker**, Julia Henckel, and Alan R. Fersht (2000). Mechanism of rescue of common p53 cancer mutations by second-site suppressor mutations. *The EMBO Journal* 19, 370-378

Kam-Bo Wong, **Brian S. DeDecker**, Stefan M. Freund, Mark R. Proctor, Mark Bycroft, and Alan R. Fersht (1999). Hot-spot Mutants of p53 Core Domain Evince Characteristic Local Structural Changes. *Proc. Natl. Acad. Sci. USA* 96, 8438-8442

Alex N. Bullock, Julia Henckel, **Brian S. DeDecker**, Christopher M. Johnson, Penka V. Nikolova, Mark R. Proctor, David P. Lane, and Alan R. Fersht (1997). Thermodynamic stability of wild-type and mutant p53 core domain. *Proc. Natl. Acad. Sci. USA* 94, 14338-14342

**Publications as a PhD Student with Paul Sigler, MD, PhD  
(Yale University):**

Ronan O'Brien, **Brian S. DeDecker**, Karen G. Fleming, Paul B. Sigler and John E. Ladbury (1998). The effects of salt on the TATA Binding Protein-DNA interaction from a Hyperthermophilic Archaeon. *Journal of Molecular Biology* 279, 117-125

Peter F. Kosa, Gourishankar Ghosh, **Brian S. DeDecker**, and Paul B. Sigler (1997). The 2.1-Å crystal structure of an archaeal preinitiation complex: TATA-box-binding protein/transcription factor (II)B core/TATA-box. *Proc. Natl. Acad. Sci. USA* 94, 6042-6047

**Brian S. DeDecker**, Ronan O'Brien, Patrick J. Fleming, James H. Geiger, Steven P. Jackson, and Paul B. Sigler (1996). The crystal structure of a hyperthermophilic archaeal TATA-box binding protein. *Journal of Molecular Biology* 264, 1072-1084

May Han, **Brian S. DeDecker**, and Steven O. Smith (1993). Localization of the retinal protonated Schiff base counterion in rhodopsin. *Biophysical Journal* 65(2), 899-906