CURRICULUM VITAE

Patrice KOEHL

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EDUCATION

1995 Habilitation à diriger les recherches, Biophysics, Louis Pasteur University, Strasbourg, France

1989 PhD in Biophysics (Molecular Biology and NMR spectroscopy), Louis Pasteur University, Strasbourg, France

1984 Diplôme d'ingénieur de l'Ecole Centrale des Arts et Manufactures de Paris. (Equivalent to M.S. in Engineering); Major: Bioengineering.

DISTINCTION AND AWARDS

2006 Alfred P. Sloan fellow

1997 Fellow, American Cancer Society (ACS)

1997 Bronze Medal from the Centre National de la Recherche Scientifique, France (Young Investigator Award).

1991 Fellow, Human Frontiers Science Program (HFSP)

1990 Fellow, Union Internationale Contre le Cancer (UICC)

EMPLOYMENT AND RESEARCH EXPERIENCE

2014-present Founding Director, Data Science Institute, University of California, Davis.

2010-present Visiting Professor, Department of Biological Sciences, National University of Singapore.

2008-present Professor, Department of Computer Science and Genome Center, University of California, Davis.

2008-2014 Associate Director of Bioinformatics, Genome Center, University of California, Davis.

2004-2008 Associate Professor, Department of Computer Science and Genome Center, University of California, Davis.

2001-2004 Senior Research Associate in the Department of Structural Biology, Stanford University.

1998-2001 Senior Visiting Research Associate in the Department of Structural Biology, Stanford University.

1997-1998 Visiting scholar in the department of Structural Biology, Stanford University. Host: Prof. Michael Levitt

Since 1989	Tenured CNRS Staff Scientist Grade 1, Integrated Structural Biology, Institut de Génétique et de Biologie Moléculaire et Cellulaire (IGBMC), Strasbourg; on leave of absence.
June-July 91	Visiting Scientist at the Molecular Modeling Laboratory of the University of Kyoto, Japan. Host: Prof. Nobuhiro Go
June-Aug 90	Visiting Scientist in the Stanford Magnetic Resonance Laboratory, Stanford University. Host: Prof. Oleg Jardetzky
1986-1989	Doctoral Research at the University Louis Pasteur of Strasbourg in the Molecular and Structural Carcinogenesis and Mutagenesis Group directed by Dr. R.P.P Fuchs. Supervisor: Prof. Jean-Francois Lefèvre; Defense: April 11, 1989.
1984-1986	Staff Scientist at the Lawrence Berkeley Laboratory, Berkeley, California, in the Biophysics Laboratory directed by Dr. A. Chatterjee.

TEACHING EXPERIENCE

2010-present	Visiting Professor, National University of Singapore. I serve as instructor in two Bioinformatics undergraduate courses in the Biochemistry Department, as well as in one graduate class on structural biology, in the Department of Biological Sciences. I initiated and teach a new graduate module on Scientific Computing applied to Biology, focusing on data analysis.
2004-present	Professor, UC Davis, Computer Science Department; I teach four classes (quarter) each year, both at the graduate and undergraduate levels. I also participate as an instructor in summer programs for high school students.
1994-1997	Lecturer, "The Fourier transform and its applications", Université Louis Pasteur, Strasbourg, Physics department, graduate level.
1992-1997	Lecturer, "Distance Geometry and protein structure", Université Louis Pasteur, Strasbourg, Biophysics department, graduate level.
1988-1994	Lecturer, "Introduction to computer science for biologists", Ecole Supérieure de Biotechnologie de Strasbourg, undergraduate level.
1989-1991	Lecturer, "Calculus", Ecole Supérieure de Biotechnologie de Strasbourg, undergraduate level.
1989	Lecturer, "Probability and statistics", Université Louis Pasteur, Strasbourg, Biology Department, undergraduate level.

REVIEWING AND EDITING

Editor:	Editor-in-chief, "Mathematics and Biomolecules", Frontiers; Associate editor, "Biology direct".
Grants:	Ad-hoc reviewer for NIH (Biophysics) and NSF (computer science) panels. External reviewer for the European Union CORDIS program (FP6 & FP7), and ERC program. External reviewer for the Israeli Science Foundation.
Journals:	Nature, Nature Chemical Biology, Journal of Molecular Biology, Nucleic Acids Research, Proteins: Struct. Func. Bioinf., Protein Science, Proc. Natl. Acad. Sci. (USA), Structure, BMC Bioinformatics (among others).
Member:	Faculty of 1000 (Protein folding)

LANGUAGES

Bilingual French/English, working knowledge in German

FUNDING

MAJOR PENDING GRANT

1. BD2K Initiative *PI: Koehl* — 7/1/2014-6/30/2018
NIH — $11,772,696 (total cost)

Title: The UC Davis 4D-Views Center

The major aims of the new proposed center are to develop an integrative research platform that will enable knowledge extraction from Biomedical Big Data and to develop training program in data analytics for biomedical research at the graduate level and beyond. The center involves 11 co-PIs, half from the UC Davis Medical School, half from the Engineering and Basic Science departments (Math, Computer Science, Statistics) at UC Davis.

ACTIVE GRANTS

1. IIS-1219278 *(PI: Gusfield; I serve as Co-PI)* — 10/1/12-9/30/15
NSF — $100,000 (direct cost/year)

Title: Algorithms and Computations for RNA Structure Prediction.

The aims of this project are to develop new algorithms for RNA structure prediction.

2. ARF Tier 3 *(PI: Matsudaira; I serve as collaborator)* — 6/1/13 - 5/31/17
Minister of Education, Singapore — S$ 14,287,000.

Title: An Integrated Framework to study the Dynamics of Biological Structures.

The main aim of this project is to develop an integrative platform to uncover the dynamics of DENGUE virus non-structural and structural proteins and the mechanisms of antibody neutralization, a key step in vaccine development. The project involves 14 PIs/collaborators, with expertise ranging from imaging the structures and dynamics of molecules at near-atomic resolution to computational biology and computational geometry.

RECENTLY EXPIRED GRANTS

1. 1RO11GM080399-01 *(PI: Koehl)* — 4/1/07 - 3/31/14
NIH — $190,000 (direct cost/year)

Title: Geometric-based and physics-based simulations of RNA folding.

The major goals of this project are to develop new methods anchored in geometry and physics to study RNA folding and predict RNA structure.

2. 1RO1GM081712-01 *(PI: Koehl)* — 8/15/07 - 7/31/11
NIH — $225,000 (direct cost/year)

Title: Alignments and Improved Refinements for High Accuracy Protein Structure Modeling.

The major goals of this project were to develop new methods that allow to reach crystal structure quality protein structure models using homology modeling.

3. MSPA-MCS *(PI: Amenta; I serve as Co-PI)* 9/1/06 - 8/31/10
NSF $119,475 (direct cost/year)

Title: Topological Shape description applied to Protein-Protein Interactions.
The major goals of this project were to define new protein shape descriptors based on the geometry and topology of protein surfaces, and to apply them to predict protein-protein interactions.

4. SLOAN fellowship *(PI: Koehl)* 9/15/06 - 9/14/10
Alfred P. Sloan Foundation $45,000 (direct cost)