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Professional Experience:

- 2023 to present: Consulting Professor, MBZUAI
- November 2018 to present: Fellow, Center for the Neurobiology of Learning and Memory, UCI
- July 2018 to present: Distinguished Professor, Department of Computer Science, UCI
- February 2017 to present: Joint appointment in the Department of Mathematics, UCI
- February 2015 to present: Joint appointment in the Department of Statistics, UCI
- October 2006 to June 2018: Chancellor's Professor, UCI
- September 2006 to present: Founding Associate-Director, Center for Machine Learning and Intelligent Systems
- January 2001 to present: Founding Director Institute for Genomics and Bioinformatics.
- June 2001 to present: Professor Department of Computer Science, School of Information and Computer Sciences, University of California, Irvine. [Joint appointments in the Department of Biological Chemistry, College of Medicine, Department of Biomedical Engineering School of Engineering]
- June 2001 to July 2019: Joint appointment in the Department of Developmental and Cell Biology, School of Biological Sciences.
- January 2002 to December 2005: Application Layer Leader (Digitally Enabled Medicine) for the California Institute for Telecommunications and Information Technology [Calit2²]
- July 1999 to May 2001: Associate Professor, Department of Information and Computer Science, University of California, Irvine. [Joint appointment in the Department of Biological Chemistry, College of Medicine and the Department of Developmental and Cell Biology, School of Biological Sciences]
- 1991 to June 1999: Chairman and CEO, Net-ID, Inc
- January 1999: Visiting Professor, Department of Computer Science, University of Florence
- 1995 to 1996: Member of the Professional Staff, Division of Biology, California Institute of Technology

- 1988 to 1995: Member of the Technical Staff in the Nonlinear Science and Information Processing Group at the Jet Propulsion Laboratory, and Visiting Research Associate, Division of Biology, California Institute of Technology
- Summer 1988: Visiting Research Mathematician, Department of Mathematics, University of California, San Diego
- 1986-1988: Visiting Lecturer, Department of Mathematics, University of California, San Diego

Education

- 1986: Ph.D. Mathematics, California Institute of Technology
- 1983: MS Computer Science and Engineering, ENSTA, Paris
- 1981: D.E.A Mathematics, University of Paris VII
- 1980: MS Mathematics, University of Paris VII
- 1980: MS Psychology, University of Paris X

Honors

- 2022 Fellow Asia-Pacific Artificial Intelligence Association (AAIA).
- 2019 Prominent Artificial Intelligence Journal Paper Award for the paper "The dropout learning algorithm" (published in 2014).
- 2019 Named Top 100 AI Leaders in Drug Discovery and Advanced Healthcare in the world by the Deep Knowledge Analytics
- 2018 Distinguished Professor, UCI
- 2017 Member of NOvA (neutrino experiment consortium)
- 2015 Elected short-term associated member of ATLAS at CERN
- 2014 Google Faculty Research Award
- 2013 Fellow International Society for Computational Biology (ISCB)
- 2012 Fellow Association Computing Machinery (ACM)
- 2011 Fellow Institute of Electrical and Electronics Engineers (IEEE)
- 2010 Eduardo R. Caianiello Prize for Scientific Contributions to the Field of Neural Networks
- 2009 Dean's Award for Research
- 2008 Fellow American Association Advancement of Science (AAAS)
- 2007 Fellow Association Advancement Artificial Intelligence (AAAI)
- 2006 Chancellor's Professor
- 2006 Microsoft Faculty Research Award
- 2006 IEEE Senior Member
- 2001 Certificate of Recognition for Neural Network Invention by NASA
- 1999 Laurel Wilkening Faculty Innovation Award at UCI
- 1998 Certificate of Service for the Caltech Alumni Fund for the 1997-98 fund raising effort.
- Recipient of the 1993 Lew Allen Award at JPL
- 1992 Certificate of Service with Distinction as Associate Editor of the *IEEE Transactions on Neural Networks*
- 1985 Bohnenblust Prize, Caltech

PUBLICATIONS

Refereed Journals

- J345. Mirana C Angel, Joseph Rinehart, Maxime Canneson, and **Pierre Baldi**. Clinical Knowledge and Reasoning Abilities of AI Large Language Models in Anesthesiology: A Comparative Study on the ABA Exam. *Anesthesia & Analgesia*, in press, (2023).
- J344. Andrew W. Browne, Geunwoo Kim, Anderson N. Vu, Josiah K. To, Don S. Minckler, Maria Del Valle Estopina, Narsing A. Rao, Christine A. Curcio, **Pierre F. Baldi**. Deep Learning Assisted Imaging Methods to Facilitate Access to Ophthalmic Telepathology, *Ophthalmology Science*, in press, (2023).
- J343. Junze Liu, Aishik Ghosh, Dylan Smith, **Pierre Baldi**, and Daniel Whiteson. Generalizing to new geometries with Geometry-Aware utoregressive Models (GAAMs) for fast calorimeter simulation. *Journal of Instrumentation (JINST)*, in press, (2023).
- J342. Elsa Ghirardini, Giulia Sagona, Angel Marquez-Galera, Francesco Calugi, Carmen M. Navarron, Francesco Cacciante, Siwei Chen, Federica Di Vetta, Lorenzo Dadà, Raffaele Mazziotti, Leonardo Lupori, Elena Putignano, **Pierre Baldi**, Jose P Lopez-Atalaya, Tommaso Pizzorusso, Laura Baroncelli. Cell-specific vulnerability to metabolic failure: the crucial role of parvalbumin expressing neurons in Creatine Transporter Deficiency. *Acta Neuropathologica Communications*, in press, (2023).
- J341. **P. Baldi** and R. Vershynin. The Quarks of Attention: Structure and Capacity of Neural Attention Building Blocks. *Artificial Intelligence*, in press, (2023).
- J340. Delaney Farrell, **Pierre Baldi**, Jordan Ott, Aishik Ghosh, Andrew W. Steiner, Atharva Kavitar, Lee Lindblom, Daniel Whiteson, and Fridolin Weber. Deducing the EOS of Dense Neutron Star Matter with Machine Learning. *Astronomische Nachrichten*, 344, 1-2, e230009,(2023).
- J339. Delaney Farrell, Pierre Baldi, Jordan Ott, Aishik Ghosh, Andrew W. Steiner, Atharva Kavitar, Lee Lindblom, Daniel Whiteson, and Fridolin Weber. Deducing Neutron Star Equation of State Parameters Directly From Telescope Spectra with Uncertainty-Aware Machine Learning. *Journal of Cosmology and Astroparticle Physics*, 02, 016, (2023).
- J338. **Pierre Baldi**, Junze Liu, Sherif Abdelkarim, Josiah K To, Marialejandra Diaz Ibarra and Andrew W. Browne. Vitreoretinal surgical instrument tracking in 3-Dimensions using Deep Learning. *Translational Vision Science and Technology*, in press, (2023).
- J337. Tavakoli, Mohammadamin; Chiu, Yin Ting; Baldi, Pierre; Carlton, Annmarie; Van Vranken, David. RMechDB: A Public Database of Elementary Radical Reaction Steps. *Journal of Chemical Information and Modeling*, in press, (2023).
- J336. Alexander Shmakov, Mohammadamin Tavakoli, **Pierre Baldi**, Christopher M. Karwin, Alex Broughton, Simona Murgia. Deep learning models of the discrete component of the galactic interstellar gamma-ray emission. *Physical Review D*, in press, (2023).
- J335. Christopher M. Karwin, Alex Broughton, Simona Murgia, Alex Shmakov, Mohammadamin Tavakoli, and **Pierre Baldi**. Improved modeling of the discrete component of the galactic interstellar gamma-ray emission and implications for the Fermi—LAT galactic center excess. *Physical Review D*, in press, (2023).
- J334. Sara Cornuti, Siwei Chen, Leonardo Lupori, Francesco Finamore, Fabrizia Carli, Muntaha Samad, Simona Fenizia, Matteo Caldarelli, Francesca Damiani, Francesco Raimondi, Raffaele Mazziotti, Christophe Magnan, Silvia Rocchiccioli, Amalia Gastaldelli, **Pierre Baldi**, Paola Tognini. Brain histone beta-hydroxy-butyrylation couples metabolism with gene expression. *Cellular and Molecular Life Sciences*, in press, (2023).

- J333. C. Glasera, S. McAleer, S. Stjarnholm, **P. Baldi**, and S. W. Barwick. Deep learning reconstruction of the neutrino direction and energy from in-ice radio detector data. *Astroparticle Physics*, (in press), (2022). Also: arXiv:2205.15872.
- J332. Paul Petrus; Marlene Cervantes; Muntaha Samad; Tomoki Sato; Alina Chao; Shogo Sato; Kevin B. Koronowski; Grace Park; Yasmine Alam; Niklas Mejhert; Marcus M. Seldin; José Manuel Monroy Kuhn; Kenneth A. Dyar; Dominik Lutter; **Pierre Baldi**; Peter Kaiser; Cholsoon Jang; Paolo Sassone-Corsi. Tryptophan Metabolism is a Physiological Integrator Regulating Circadian Rhythms. *Molecular Metabolism*, 64, 101556, (2022).
- J331. M. Samad, F. Agostinelli, T. Sato, K. Shimaji, and **P. Baldi**. CircadiOmic: Circadian Omic Web Portal. *Nucleic Acids Research*, Special Web Server Issue, 50, W1, W183--W190, (2022).
- J330. Siwei Chen, Gregor Urban, and **Pierre Baldi**. Weakly Supervised Polyp Segmentation in Colonoscopy Images using Deep Neural Networks. *Journal of Imaging*, 8, 5, 121, (2022).
- J329. Amal Alachkar, Justine Lee, Kalyani Asthana, Roudabeh Vakil Monfared, Jiaqi Chen, Sammy Alhassen, Muntaha Samad, Marcelo Wood, Emeran Mayer, and **Pierre Baldi**. The Hidden Link between Circadian Entropy and Mental Disorders. *Translational Psychiatry*, 12, 1, 1—12, (2022).
- J328. Yadong Lu, Alexis Romero, Michael James Fenton, Daniel Whiteson, and **Pierre Baldi**. Resolving Extreme Jet Substructure. *Journal of High Energy Physics*, in press, (2022).
- J327. Andrew W. Browne, Ekaterina Deyneka, Francesco Ceccarelli, Siwei Chen, Josiah K. To, Jianing Tang, Anderson N. Vu, **Pierre Baldi**. Deep Learning to Enable Color Vision in the Dark. *PLOS ONE*, 17, 4, e0265185, (2022).
- J 326. M. Stanfield, J. Ott, C. Gardner, N. F. Beier, D. Farinella, C. A. Mancuso, **P. Baldi**, and F. Dollar. Real-time reconstruction of high energy, ultrafast laser pulses using deep learning. *Nature Scientific Reports*, 12, 5299--, <https://doi.org/10.1038/s41598-022-09041-y>, (2022).
- J325. Alexander Shmakov, Michael James Fenton, Ta-Wei Ho, Shih-Chieh Hsu, Daniel Whiteson, Pierre Baldi. SPANet: Generalized Permutationless Set Assignment for Particle Physics using Symmetry Preserving Attention. *SciPost Physics*, 12, 178, published 30 May 2022, (2022).
- J324. W. England, S. Chen, **P. Baldi**, and R. Spitale. An Atlas of Posttranslational Modifications on RNA Binding Proteins. *Nucleic Acids Research* 50, 8, 4329--4339, (2022).
- J323. G. Urban, C. Magnan, and **P. Baldi**. SSpro/ACCpro 6: Almost Perfect Prediction of Protein Secondary Structure and Relative Solvent Accessibility Using Profiles, Deep Learning, and Structural Similarity. *Bioinformatics*, i8, 7, 2064—2065, (2022).
- J322. A. Tavakoli, A. Mood, D. Van Vranken, and **P. Baldi**. Quantum Mechanics and Machine Learning Synergies: Graph Attention Neural Networks to Predict Chemical Reactivity. *Journal of Chemical Information and Modeling*, 62, 9, 2121--2132, (2021).
- J321. Shogo Sato, Kenneth A. Dyar, Jonas T. Treebak, Astrid Linde Basse, Mirena Schönke, Siwei Chen, Muntaha Samad, **Pierre Bardi**, Dominik Lutter, Juleen R. Zierath, Paolo Sassone-Corsi. Atlas of Exercise Metabolism Reveals Time-Dependent Systemic Metabolic Homeostasis. *Cell Metabolism*, 34, 2, 329—345, (2021).
- J320. Michael James Fenton, Alexander Shmakov, Ta-Wei Ho, Shih-Chieh Hsu, Daniel Whiteson, and **Pierre Baldi**. Permutationless many-jet event reconstruction with symmetry preserving attention networks. *Physical Review D*, 105, 11, in June 1st issue, (2022).
- J319. K. Lin, G. Urban, M. C. Yang, L.C Lee, D.W. Lu, W. L. M. Alwardand, and **P. Baldi**. Accurate Identification of the Trabecular Meshwork under Gonioscopic view in Real Time using Deep Learning. *Ophthalmology Glaucoma*, 5, 4, 402—412, (2022).
- J318. **P. Baldi**. A Call for a Public Open Database of All Chemical Reactions. *Journal of Chemical Information and Modeling*, 62, 9, 2011–2014, (2021).

- J317. Roudabeh Vakil Monfared, Wedad Alhassen, Tri Minh Truong, Michael Angelo Maglalang Gonzales, Vincent Vachirakorntong, Siwei Chen, **Pierre Baldi**, Olivier Civelli, and Amal Alachkar. Transcriptome Profiling of Dysregulated GPCRs Reveals Overlapping Patterns across Psychiatric Disorders and Age-Disease Interactions. *Cells*, 10, 11, 2967, Oct 31; doi: 10.3390/cells10112967, (2021).
- J316. B. Shahbaba, L. Li, F. Agostinelli, M. Saraf, G. Elias, **P. Baldi**, and N. Fortin. Hippocampal Ensembles Represent Sequential Relationships Among Discrete Nonspatial Events. *Nature Communications*, **13**, Article number: 787 (2022). Also: <https://www.biorxiv.org/content/10.1101/840199v1>
- J315. Julian Collado, Kevin Bauer, Edmund Witkowski, Taylor Faucett, Daniel Whiteson, and **Pierre Baldi**. Learning to Isolate Muons. *Journal of High Energy Physics*, 2021, 200 (2021). [https://doi.org/10.1007/JHEP10\(2021\)200](https://doi.org/10.1007/JHEP10(2021)200).
- J314. Siwei Chen, Wedad Alhassen, Roudabeh Vakil Monfared, Benjamin Vachirakorntong, Surya Nauli, **Pierre Baldi**, and Amal Alachkar. Dynamic Changes in Brain Cilia Transcriptomes across the Human Lifespan. *International Journal of Molecular Sciences*, 22, 19, 10387, <https://doi.org/10.3390/ijms221910387>, (2021).
- J313. Stephen McAleer; Alexander Fast; Yuntian Xue; Magdalene J. Seiler; William C. Tang; Mihaela Balu; **Pierre Baldi**; Andrew W. Browne. Deep Learning–Assisted Multiphoton Microscopy to Reduce Light Exposure and Expedite Imaging in Tissues With High and Low Light Sensitivity. *Translational Vision Science & Technology*, October 2021, Vol.10, 30, (2021). doi:<https://doi.org/10.1167/tvst.10.12.30>.
- J312. E. Lashgari, J. Ott, **P. Baldi**, and U. Maoz. An End-to-End CNN with Attentional Mechanism Applied to Raw EEG in a BCI Classification Task. *Journal of Neural Engineering*, 18, 4, DOI 10.1088/1741-2552/ac1ade, (2021).
- J311. **P. Baldi**, W. Alhassen, S. Chen, H. Nguyen, M. Khoudari, A. Alachkar. Large-Scale Analysis Reveals Spatiotemporal Circadian Patterns of Cilia Transcriptomes in the Primate Brain. *Journal of Neuroscience Research*, 99, 10, 2610—2624, first published: 26 July 2021 <https://doi.org/10.1002/jnr.24919>, (2021).
- J310. Carolina M. Greco, Kevin B. Koronowski, Jacob G. Smith, Jiejun Shi, Siwei Chen, Muntaha Samad, Patrick-Simon Welz, Valentina M. Zinna, Thomas Mortimer, Kohei Shimaji, Tomoki Sato, Paul Petrus, Arun Kumar, Mireia Vaca Dempere, Cassandra Van, Kenneth A. Dyar, Dominik Lutter, Marcus M. Seldin, Wei Li, **Pierre Baldi**, Pura Muñoz-Cánoves, Salvador Aznar Benitah, and Paolo Sassone-Corsi. Integration of Feeding Behaviour by the Liver Circadian Clock Reveals Network Dependency of Metabolic Rhythms. *Science Advances*, 7, 39, eabi7828, (2021).
- J309. Chen, Siwei; Lee, Justine; Truong, Tri Minh; Alhassen, Sammy; **Baldi, Pierre**; Alachkar, Amal. Age-Related Neurometabolomic Signature of Mouse Brain. *ACS Chemical Neuroscience*, 12, 15, 2887--2902, (2021).
- J308. Julian Collado, Jessica N. Howard, Taylor Faucett, Tony Tong, **Pierre Baldi**, and Daniel Whiteson. Learning to identify electrons. *Physical Review D*, 103, 11, 116028, (2021).
- J307. J. Ott, D. Bruyetter, C. Arbuckle, D. Balsz, S. Hecth, L. Shubitz, and **P. Baldi**. Detecting Pulmonary Coccidioidomycosis with Deep Convolutional Neural Networks. *Machine Learning with Applications*, 5, 100040, (2021).
- J306. **P. Baldi** and R. Vershynin. A Theory of Capacity and Sparse Neural Encoding. *Neural Networks*, 145, 12—27, (2021).
- J305. L. Hertel, and **P. Baldi**. Reproducible Hyperparameter Optimization. *Journal of Computational and Graphical Statistics*, in press, (2021).
- J304. Rianne Campbell, Siwei Chen, Joy Beardwood, Alberto Lopez, Lilyana Pham, Ashley Keiser, Jess Childs, Dina Matheos, Vivek Swarup, **Pierre Baldi**, and Marcelo Wood. Cocaine

induces paradigm-specific changes to the transcriptome within the Ventral Tegmental Area. *Neuropsychopharmacology*, 46, 10, 1768—1779, (2021).

- J303. S. Chen, S. Alhassen, **P. Baldi**, G. Abott, A. Alachkar. Intergenerational Stress Transmission is Associated with Brain Metabotranscriptome Remodeling and Mitochondrial Dysfunction. *Communications Biology*, 4, 1, 1—15, (2021).
- J302. Griffin Mooers, Michael Pritchard, Tom Beucler, Jordan Ott, Galen Yacalis, **Pierre Baldi**, Pierre Gentine Assessing the Potential of Deep Learning for Emulating Cloud Superparameterization in Climate Models with Real-Geography Boundary Conditions. *Journal of Advances in Modeling Earth Systems*, 13, 5, First published: 23 April 2021 <https://doi.org/10.1029/2020MS002385>, (2021).
- J301. A. Tavakoli, F. Agostinelli, and **P. Baldi**. SPLASH: Learnable Activation Functions for Improving Accuracy and Adversarial Robustness. *Neural Networks*, 140, 1-12, (2021).
- J300. Kadish, Dora; Mood, Aaron; Tavakoli, Mohammadamin; Gutman, Eugene; **Baldi, Pierre**; Van Vranken, David. Methyl Cation Affinities of Canonical Organic Functional Groups. *The Journal of Organic Chemistry*, in press, (2021).
- J299. Tom Beucler, Michael Pritchard, Stephan Rasp, Jordan Ott, **Pierre Baldi**, and Pierre Gentine. Enforcing analytic constraints in neural networks emulating physical systems. *Physical Review Letters*, 126, 9, 098302, (2021). Also: arXiv: <http://arxiv.org/abs/1909.00912>.
- J298. Wedad Alhassen, Siwei Chen, Marquis Vawter, Brianna Kay Robbins, Henry Nguyen, Thant Nyi Myint, Yumiko Saito, Anton Schulmann, Surya M. Nauli, Olivier Civelli, **Pierre Baldi**, and Amal Alachkar. Patterns of Cilia Gene Dysregulations in Major Psychiatric Disorders. *Progress in Neuropsychopharmacology & Biological Psychiatry*, page 110255, (2021).
- J297. Y. Lu, J. Collado, D. Whiteson, and **P. Baldi**. SARM: Sparse Autoregressive Models for Scalable Generation of Sparse Images in Particle Physics. *Physical Review D*, 103, 3, 036012, (2021).
- J296. B. Abi, A. Abed Abud, R. Acciarri, M.A. Acero, G. Adamov, M. Adamowski, D. Adams, P. Adrien, M. Adinolfi, Z. Ahmad, et al. (DUNE Collaboration). First results on ProtoDUNE-SP liquid argon time projection chamber performance from a beam test at the CERN Neutrino Platform. *Journal of Instrumentation*, Volume 15, December 2020.
- J295. C. Greco, M. Cervantes, J. Fustin, K. Ito, N. Ceglia, M. Samad, J. Shi, K. Koronowski, I. Forne, S. Ranjit, J. Gaucher, K. Kinouchi, R. Kojima, E. Gratton, W. Li, **P. Baldi**, A. Imhof, H. Okamura, P. Sassone-Corsi. S-Adenosyl-L-Homocysteine Hydrolase Links Methionine Metabolism to the Circadian Clock and Chromatin Remodeling. *Science Advances*, 6, 51, eabc5629, (2020).
- J294. Thrift, William; Ronaghi, Sasha; Samad, Muntaha; Wei, Hong; Nguyen, Dean; Cabuslay, Antony; Groome, Chloe; Santiago, Peter; **Baldi, Pierre**; Hochbaum, Allon; Ragan, Regina Deep Learning Analysis of Vibrational Spectra of Bacterial Lysate for Rapid Antimicrobial Susceptibility Testing. *ACS Nano*, 14, 11, 15336-15348, Publication Date (Web): October 23, 2020, DOI: 10.1021/acsnano.0c05693, (2020).
- J293. Mehran J. Umerani, Preeta Pratakshya, Atrouli Chatterjee, Juana A. Cerna, Hoshin Kim, Gregor Ilc, Matic Kovacic, Christophe Magnan, Benedetta Marmioli, Barbara Sartori, Andrew W. Bartlett, Erica M. Leung, Zhijing Feng, Kyle L. Naughton, Brenna Norton-Baker, Long Phan, James Long, Alex Allvato, Jessica E. Leal-Cruz, Qiyin Lin, **Pierre Baldi**, Sigrid Bernstorff, Janez Plavec, Yara Yingling, Alon A. Gorodetsky Structure, Self-Assembly, and Properties of a Truncated Reflectin Variant, *Proceedings of the National Academy of Sciences*, DOI number 10.1073/pnas.2009044117, (2020).
- J292. Paola Tognini, Muntaha Samad, Kenichiro Kinouchi, Yu Liu, Jean-Christophe Helbling, Marie-Pierre Moisan, Kristin L. Eckel-Mahan, **Pierre Baldi**, and Paolo Sassone-

- Corsi. Reshaping Circadian Metabolism in the Suprachiasmatic Nucleus and Prefrontal Cortex by Nutritional Challenge. *PNAS*, 117, 47, 29904--29913, first published November 10, 2020; <https://doi.org/10.1073/pnas.2016589117>, (2020).
- J291. L. Hertel, Julian Collado, Peter Sadowski, Jordan Ott, **Pierre Baldi**. Sherpa: Robust Hyperparameter Optimization for Machine Learning. *SoftwareX*, 12, (2020). Also: arXiv:2005.04048.
 - J290. C. Lee, M. Samad, I. Hofer, **P. Baldi**, and M. Cannesson. Development and Validation of an Interpretable Neural Network for Prediction of Postoperative In-hospital Mortality, *npj Digital Medicine*, 4, 1, 1--9, (2021).
 - J289. Gregor Urban, Nate Feil, Ella Csuka, Kiana Hashemi, Chloe Ekelem, Franchesca Choi, Natasha Atanaskova Mesinkovska, and **Pierre Baldi**. Combining Deep Learning with Optical Coherence Tomography Imaging to Determine Scalp Hair and Follicle Counts. *Lasers in Surgery and Medicine*, 53:171–178 (2021). First published: 22 September 2020, <https://doi.org/10.1002/lsm.23324>.
 - J288. Debora Napoli, Leonardo Lupori, Raffaele Mazziotti, Giulia Sagona, Sara Bagnoli, Muntaha Samad, Erika Kelmer Sacramento, Joanna Kirkpatrick, Elena Putignano, Siwei Chen, Eva Terzibasi Tozzini, Paola Tognini, Jessica Kwok, **Pierre Baldi**, Alessandro Cellerino, and Tommaso Pizzorusso. MiR-29 coordinates age-dependent plasticity brakes in the adult visual cortex. *EMBO Reports*, 21, 11, 1-19, DOI: 10.15252/embr.202050431, (2020).
 - J287. K. J. Debski1, N. Ceglia, A. Ghestem, A. I. Ivanov, G. E. Brancati, S. Bröer, A. M. Bot1, J. A. Müller, S. Schoch, A. Becker, W. Löscher, M. Guye, P. Sassone-Corsi, K. Lukasiuk, **P. Baldi**, C. Bernard. The circadian dynamics of the hippocampal transcriptome and proteome is altered in experimental epilepsy. *Science Advances*, 6, 41, eaat5979, (2020).
 - J286. G. Urban, M. Torrisi, C. Magnan, G. Pollastri, and **P. Baldi**. Protein Profiles: Biases and Protocols *Computational and Structural Biotechnology Journal*, 18, 2281--2289, (2020).
 - J285. Pietro DiLena and **Pierre Baldi**. Fold recognition by scoring protein map similarities using the congruence coefficient. *Bioinformatics*, in press, (2020).
 - J284. J. Ott, M. Pritchard, N. Best, E. Linstead, M. Curcic, and **P. Baldi**. A Fortran-Keras Deep Learning Bridge for Scientific Computing. *Scientific Programming*, (2020). Received Article of the Year 2020 Award.
 - J283. Y. Liu, **P. Baldi**, P. Sassone-Corsi, E. Borrelli. Cocaine-mediated Circadian Reprogramming in the Striatum Through Dopamine-driven PPAR γ Activation. *Nature Communications*, 11, 1, 1--14, (2020).
 - J282. Carolina Magdalen Greco, Stefano Garretto, Emilie Montellier, Yu Liu, Siwei Chen, **Pierre Baldi**, Paolo Sassone-Corsi and Jacopo Lucci. A non-pharmacological approach in the gut triggers distal metabolic rewiring capable of ameliorating diet-induced metabolic dysfunction encompassed by metabolic syndrome. *Scientific Reports*, 10, 1, 1--13, (2020).
 - J281. Siwei Chen, Wedad Alhassen, Ryan Yoshimura, Angele De Silva, Geoffrey W. Abbott, **Pierre Baldi**, Amal Alachkar. Metabolomic and Transcriptomic Signatures of Prenatal Excessive Methionine in Mice Support Nature Rather than Nurture in the Pathogenesis of Schizophrenia. *Communications Biology*, 3, 1, 1-12, (2020).
 - J.280 G. Urban, S. Porhemmat, M. Stark, B. Feeley, K. Okada, and **P. Baldi**. Classifying Shoulder Implants in X-ray Images using Deep Learning. *Computational and Structural Biotechnology Journal*, in press, (2020).
 - J. 279 J. Ott, E. Linstead, N. LaHaye, and **P. Baldi**. Learning in the Machine: To Share or Not to Share? *Neural Networks*, 126, 235-249, (2020). Available online March 25, 2020. <https://doi.org/10.1016/j.neunet.2020.03.016>.

- J278. A. Mood, A. Tavakoli, E. Gutman, D. Kadish, **P. Baldi**, and D. VanVranken. Methyl Anion Affinities of the Canonical Organic Functional Groups. *The Journal of Organic Chemistry*. DOI: 10.1021/acs.joc.9b03187 • Publication Date (Web): 29 Jan 2020.
- J277. Ira S. Hofer, Christine Lee, Eilon Gabel, **Pierre Baldi**, and Maxime Cannesson. Development and Validation of a Deep Neural Network Model to Predict Postoperative Mortality, Acute Kidney Injury, and Reintubation using a single feature set. *npj Digital Medicine*, 3, 1, 1--10, (2020). DOI : 10.1038/s41746-020-0248-0, NPJDIGITALMED-00456, (2020).
- J276. Margit Juhasz, SiWei Chen, Arash Khosrovi-Eghbal, Chloe Ekelem, Yessica Landaverde, **Pierre Baldi**, Natasha Atanaskova Mesinkovska. Characterizing the skin and gut microbiome of alopecia areata patients. *SKIN The Journal of Cutaneous Medicine*, 4,1, DOI: 10.25251/skin.4.1.4 (2020).
- J275. Giorgio Ramadori, Rafael M. Ioris, Zoltan Villanyi, Raquel Firnkes, Olesya O. Panasenko, George Allen, Georgia Konstantinidou, Ebru Aras, Xavier Brenachot, Tommasina Biscotti, Anne Charollais, Michele Luchetti, Fedor Bezrukov, Alfredo Santinelli, Muntaha Samad, **Pierre Baldi**, Martine A. Collart, and Roberto 6 Coppari. FKBP10 regulates protein translation to sustain lung cancer growth. *Cell Reports*, in press, (2019).
- J274. L. Li, N. Nayak, J. Bian, **P. Baldi**. Efficient neutrino oscillation parameter inference using Gaussian processes. *Physical Review D*, 101, 012001 – Published 2 January 2020, DOI:https://doi.org/10.1103/PhysRevD.101.012001, (2020).
- J273. Jonathan Gaucher, Kenichiro Kinouchi, Nicholas Ceglia, Emilie Montellier, Shahaf Peleg, Carolina Magdalen Greco, Andreas Schmidt, Ignasi Forne, Selma Masri, **Pierre Baldi**, Axel Imhof, Paolo Sassone-Corsi. Distinct Metabolic Adaptation of Liver Circadian Pathways to Acute and Chronic Patterns of Alcohol Intake. *Proceedings of the National Academy of Sciences USA*, USA, December 10, 2019, 116, (50), 25250-25259; https://doi.org/10.1073/pnas.1911189116, (2019).
- J272. M.A. Acero et al. (NovA collaboration). First measurement of neutrino oscillation parameters using neutrinos and antineutrinos by NovA. *Phys. Rev. Lett.* 123, 151803 – Published 11 October 2019.
- J271. Christine Lee, Christopher Wray, Vatche Agopian, Gregor Urban, Pierre Baldi, Maxime Cannesson, Brent Ershoff. Training and Validation of Deep Neural Networks for the Prediction of 90-Day Post-Liver Transplant Mortality Using UNOS Registry Data. *Transplantation Proceedings*, 52.1, 246--258, <https://doi.org/10.1016/j.transproceed.2019.10.019>, (2020).
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- C104. Pierre Baldi. Deep Learning Overparameterization: the Shallow Fallacy. Northern Lights Deep Learning Conference, Tromso, Norway, January 2024.
- C103. Antonios Alexos and Pierre Baldi. Speech editing by hitch-hiking a pre-trained FastSpeech2 model. Northern Lights Deep Learning Conference, Tromso, Norway, January 2024.
- C102. Mohammadamin Tavakoli, Pierre Baldi, Ann Marie Carlton, Yinting Chiu, Alexander Shmakov, David Van Vranken. AI for Interpretable Chemistry: Predicting Radical Mechanistic Pathways via Contrastive Learning. Thirty-seventh Conference on Neural Information Processing Systems, NeurIPS 2023, New Orleans, Louisiana, United States of America, Dec 10 2023.
- C101. Sungduk Yu, Walter Hannah, Liran Peng, Jerry Lin, Mohamed Aziz Bhouri, Ritwik Gupta, Björn Lütjens, Justus Christopher Will, Gunnar Behrens, Julius Busecke, Nora Loose, Charles I Stern, Tom Beucler, Bryce Harrop, Benjamin R Hillman, Andrea Jenney, Savannah Ferretti, Nana Liu, Anima Anandkumar, Noah D Brenowitz et al. (36 additional authors not shown). ClimSim: A large multi-scale dataset for hybrid physics-ML climate emulation. Thirty-seventh Conference on Neural Information Processing Systems Datasets and Benchmarks Track, NeurIPS 2023 Datasets and Benchmarks, New Orleans, USA, Dec 10 2023.
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- C93. P. Baldi and R. Vershynin. Foundations of Attention Mechanisms in Deep Neural Network Architectures. Attention Workshop, NeurIPS 2022. Accepted for oral presentation, (2022).
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- C9. **P. Baldi**, Y. Chauvin, T. Hunkapiller, and M. A. McClure. Hidden Markov Models in Molecular Biology: New Algorithms and Applications, Advances in Neural Information Processing Systems, S. J. Hanson, J. D. Cowan and C. Lee Giles Editors, Morgan Kaufmann Publishers, 747-754, (1993).
- C8. **P. Baldi** and Nikzad Toomarian. Learning Trajectories with a Hierarchy of Oscillatory Modules, Proceedings of the 1993 IEEE International Conference on Neural Networks, San

Francisco, CA, Volume III, 1172-1176, and, in similar form, in Proceedings of the 1993 European Symposium on Artificial Neural Networks (ESANN93), Brussels, 183-188.

- C7. **P. Baldi** and Y. Chauvin. Trading Decision Learning, Neural Networks for Computing Conference (abstract), Snowbird, UT, (1992).
- C6. **P. Baldi**. A Modular Hierarchical Approach to Learning, Proceedings of the 2nd International Conference on Fuzzy Logic and Neural Networks, (Iizuka, Japan), Vol. 2, 985-988, (1992).
- C5. **P. Baldi**. Computing with Arrays of Bell-Shaped and Sigmoid Functions. Bernstein Polynomials, the Heat Equation and Universal Approximation Properties, Proceedings of the 1990 Conference on Neural Information Processing Systems, Denver, CO, Morgan Kaufman Publishers, 735-742, (1991).
- C4. **P. Baldi**, Y. Rinott, and C. Stein. On the Distribution of the Number of Local Minima of a Random Function on a Graph, Proceedings of the 1989 Conference on Neural Information Processing Systems, Denver, CO, Morgan Kaufman Publishers, 727-732, (1990).
- C3. **P. Baldi**. Neural Networks and Principal Component Analysis: Landscapes and Algorithms, Proceedings of the 1988 Conference on Neural Information Processing, Denver, CO, Morgan Kaufman Publishers, 65-72, (1989).
- C2. **P. Baldi** and S.S. Venkatesh. On Properties of Networks of Neuron-Like Elements: Complexity and Capacity, Proceedings of the IEEE Conference on Neural Information Processing Systems (Denver 1987), published by the American Institute of Physics, (D.Z. Anderson, Editor).
- C1. **P. Baldi** and E.B. Baum. Caging and Exhibiting Ultrametric Structures, Proceedings of the Conference on Neural Networks for Computing, Snowbird, Utah, April 1986, published by the American Institute of Physics, 35-40, (1986), (John S. Denker, Editor).

Other

- R3. F Agostinelli, M Hoffman, P Sadowski, **P Baldi**. Learning activation functions to improve deep neural networks. arXiv preprint arXiv:1412.6830 (2014). [over 500 citations]
- R2. **P. Baldi** and K. Muller and G. Schneider. Editorial: Charting Chemical Space: Challenges and Opportunities for Artificial Intelligence and Machine Learning. Molecular Informatics, 30, 9, 751, (2011).
- R1. **P. Baldi** What Genes are Made Of. Review of edited book entitled: The Genomic Revolution: Unveiling the Unity of Life. Pathways, (2003).
- Several tutorials (e.g. Chemoinformatics Tutorial given at the 2006 ISMB Conference).

Recent Articles in the Press Covering Some of the Publications Above

For AI and the Rubik's Cube:

- <https://www.technologyreview.com/s/611281/a-machine-has-figured-out-rubiks-cube-all-by-itself/>
- <https://gizmodo.com/self-taught-ai-masters-rubik-s-cube-in-just-44-hours-1826918072>
- <https://www.hpcwire.com/2018/07/25/new-deep-learning-algorithm-solves-rubiks-cube/>
- <https://hothardware.com/news/university-california-deep-learning-machine-teaches-itself-solve-rubiks-cube>
- <https://www.latimes.com/local/lanow/la-me-ln-rubiks-cube-20180623-story.html>
- <https://interestingengineering.com/an-ai-system-taught-itself-how-to-solve-the-rubiks-cube-in-just-44-hours>
- <https://hub.packtpub.com/deepcube-a-new-deep-reinforcement-learning-approach-solves-the-rubiks-cube-with-no-human-help/>

- <https://www.yahoo.com/news/machine-learning-solve-rubik-apos-162300548.html>
- <https://www.popularmechanics.com/culture/a21562414/machine-learning-finally-tackles-the-rubiks-cube/>
- <https://www.cnet.com/news/machines-can-now-finish-the-rubiks-cube-without-human-help/>
- <https://www.fudzilla.com/news/ai/46563-ai-defeats-rubik-s-cube-without-human-help>
- <https://www.digitaltrends.com/computing/ai-rubiks-cube-solution-university-of-california/>
- <https://techxplora.com/news/2018-06-deepcube-solver-approach-cube.html>
- http://www.hardocp.com/news/2018/06/17/machine_has_figured_out_rubikrsquo_s_cube_all_by_itself
- <https://www.techspot.com/news/75140-scientists-have-developed-machine-can-solve-rubik-cube.html>

From Erno Rubik, the inventor of the Rubik's Cube:

- <https://plus.google.com/+ErnoRubik/posts/VvnVFx5HP8i>
- <https://plus.google.com/+ErnoRubik/posts/JHcT6S3kzC8>

For AI and Drug Discovery:

- <http://analytics.dkv.global/data/pdf/AI-for-DD-Q4/Top-100-AI-Leaders.pdf>
- <https://www.linkedin.com/pulse/top-100-ai-leaders-drug-discovery-advanced-healthcare-colangelo/>
- <https://www.nature.com/articles/d41586-018-05267-x>
- <https://ai-pharma.dka.global/ai-leaders/>

Databases, Software, and Web Servers

- Please see: www.ics.uci.edu/~pfbaldi and www.igb.uci.edu/servers/servers.html.

Protein Structure Prediction (SCRATCH suite):

SSpro: Protein secondary structure prediction server (3 classes).

SSpro8: Protein secondary structure prediction server (8 classes).

ACCpro: Solvent accessibility prediction server.

CONpro: Residue contact number prediction server.

DIpro: Disulphide bridge prediction server.

BETApr: Beta-residue and beta-strand prediction server.

MUpro: Single amino acid mutation stability prediction server.

DISpro: Disordered region prediction server.

DOMpro: Domain prediction server.

CMAPpro: Contact map prediction server.

SVMcon: Amino acid contact prediction server (using Support Vector Machines).

CCMAPpro: Coarse contact map prediction server.

CMAP23Dpro: 3D reconstruction from contact map.

3Dpro: 3D structure prediction server (ab initio).

TMBpro: Transmembrane beta-barrel features and tertiary structure prediction server.

SELECTpro: Protein model selection server using a structure-based energy function.

SOLpro: Protein solubility prediction server.

SIDE-pro: Protein side-chain conformation prediction server

D-Finder: Kinase docking site prediction server.

Mass Spectrometry suite:

Link Finder: Processes mass spectrometry data and allows users to identify peptides linked by MS cleavable crosslinkers.

Immunology suite:

BEpro: Discontinuous B-cell epitope prediction server.

COBEpro: Continuous B-cell epitope prediction server.

ANTIGENpro: Protein antigenicity prediction server.

Sequence Modeling and Analysis:

HMMpro: Hidden Markov Model simulator for biological sequence analysis, with graphical interface.

Comparative Genomics:

LineUp: Comparative genomics server (order + density).

CloseUp: Comparative genomics server (density alone).

DNA Microarray Analysis:

Cyber-T: DNA microarray gene expression analysis server.

Databases and Systems Biology:

ICBS: Inter-chain beta sheet database of protein-protein interactions and web server.

PSPDB: Poxvirus structural proteomics database and webserver.

Sigmoid Database: Database for molecular interactions and pathways (Systems Biology).

Sigmoid Architecture.

GOnet: Yeast database and visualization tool combining gene (SGD), gene ontology (GO), and gene interaction information (GRID).

MotifMap: Database and web server of genome wide Transcription Factor binding sites for all model organisms with alignments and evolutionary conservation scores.

MotifMap-RNA: Database and web server of genome wide RNA-binding protein binding sites for all model organisms with alignments and evolutionary conservation scores.

Circadiomics: Integrated genomic, proteomic, and metabolomic database, software, and web server for the study of circadian rhythms.

Mitochondrial Modeling:

Systems biology mathematical models of mitochondria.

High-Throughput Sequencing (HTS) Pipeline:

Computational pipeline and web server for analyzing all the data produced by the UCI Genomics High-Throughput Facility (GHTF) for the entire campus. The pipeline is used to produce, store, and analyze reads, map them to relevant genomes, and apply relevant quantitative analyses for sequencing, ChIP-seq, and RNA-seq projects.

Chemoinformatics:

ChemDB: Chemoinformatics portal including: (1) a large database (5M) of organic compounds for molecular docking, drug screening, and retrosynthesis applications; (2) multiple Web server machine learning-based predictors of physical, chemical, and biological properties; (3) an organic chemistry expert system (Reaction Explorer) used to power several applications, such as Synthesis Explorer and Mechanism Explorer. Synthesis Explorer and Mechanism Explorer are interactive tutorial systems to learn undergraduate-level organic chemistry. Synthesis Explorer and Mechanism Explorer have been adopted and used in relevant undergraduate organic chemistry classes at UCI. Reaction Explorer has been licensed and is being distributed worldwide by Wiley; (4) an organic chemistry expert system (Reaction Predictor) that uses deep learning to predict the outcome of chemical reactions.

Machine Learning: Modules for deep learning, recursive and recurrent neural networks, dropout. Software for hyperparameter optimization (Sherpa).

Machine Learning in Physics: Web portal with data sets, programs, and papers.

Software Mining:

Sourcerer: Database and information retrieval system for source code. Search engine for opensource software.

AI:

DeepCube: Deep Reinforcement Learning system to solve the Rubik's cube and other related combinatorial puzzles.

Invention Disclosures and Patent Applications (Partial List)

- Invention "Neural Network with Modular Hierarchical Learning" (filed by NASA).
- Invention "Structure-Based Drug Design of Anti-Tuberculosis Drug Targeted At Acyl-CoA Carboxylase of Mycobacterium Tuberculosis" (filed by UCI).
- Invention "Method of Treatment for Microbacterium Tuberculosis." PCT/US07/61859 (UC Case 2006-265-1)
- Invention "Human Genome Bioinformatics, Probabilistic Modeling of Biological Data", (Disclosure, UCI Office of Technology Alliances).
- Invention "Methods and Composition for Selecting and Using Single Nucleotide Polymorphisms" UC Case No. 2006-321-1
- Invention "Code Search: a Retrieval System for Software Programs", (Disclosure UCI Office of Technology Alliances). UC Case No. 2006-324-1
- Invention "Methods and Implementations for Rapid and Accurate Searches of Chemical Compounds", (Disclosure UCI Office of Technology Alliances). UC Case No. 2007-107-1
- Invention "Methods and Implementations for Improving the Retrieval of Chemical Compounds", (Disclosure UCI Office of Technology Alliances). UC Case No. 2007-319-1
- Invention "Organic Chemistry Synthesis Explorer: Reaction Problem Generator and Tutorial System", (Disclosure UCI Office of Technology Alliances). UC Case No. 2007-378-1
- Invention "Methods and Implementations for Storing Sparse Vectors with Applications in Chemoinformatics and Other Areas". UC Case No. 2007-793-1
- Invention "Data Structures and Compression Methods for Biological Sequence Data". UC Case No. 2009-432-1
- Invention "Integrative Approach for the Analysis and Visualization of Static or Dynamic Omic Data, Including Genomic, Proteomic, Gene Expression, and Metabolic Data". UC Case No. 2011-813-1
- Invention "Methods and Systems for Identification of Trabecular Meshwork and Other Intraocular Anatomical Structures and Tissue Types" Filing Date: November 4, 2022. UC Case No.: 2022-930-1, SU&B Ref.: UCIVN-104N. • United States Provisional Patent Application No. 63/422,859.

INVITED TALKS, TUTORIALS, PRESENTATIONS (Partial List)

Sample before 2005:

- University of Florida, Gainesville
- MIT
- Genome Therapeutics
- University of Madrid, Spain
- University of Bologna, Italy
- Bioinformatics School, San Miniato, Italy
- Systems Biology Conference, Caltech
- ISMB Conference
- JOBIM Conference in Toulouse, France
- University of Paris VI, Paris, France
- Ecole Normale Supérieure, Paris, France
- Fred Hutchinson Cancer Research Center
- University of Rome, Italy
- Interface Conference
- University of Rio de Janeiro, Brazil
- VII Brazilian Symposium on Neural Networks, Recife, Brazil
- Institute for Mathematics and its Applications (IMA), University of Minnesota
- University of California, San Diego
- RFIA Conference (Reconnaissance des Formes et Intelligence Artificielle) , Toulouse, France
- Joint Symposium on Neural Computation
- International Joint Conference on Neural Networks
- University of Louisiana, Lafayette
- University of Algarve, Faro, Portugal
- IEEE CSB (Computational Systems Bioinformatics), Stanford
- University of Arizona, Tucson
- Genentech
- UCSD

Since 2005:

- Invited Tutorial in Bioinformatics, GENSIP 2005, IEEE International Workshop on Genomic Signal Processing and Statistics, Newport, RI, (May 2005)
- Keynote Speaker, RFIA Conference (Reconnaissance des Formes et Intelligence Artificielle) , Nice, France (June 2005)
- Keynote speaker, IJCNN, Montreal, Canada (August 2005)
- Keynote speaker, Computer Vision and Pattern Recognition Conference (CVPR), San Diego, CA (July 2005)
- Invited speaker The Chinese University of Hong Kong (Distinguished Lecture Series)
- Keynote Speaker, International Conference on Neural Networks and Brain, Beijing, China (October 2005)
- Invited speaker NIHS Toxicology Division, Tokyo, Japan
- Invited speaker, Kyoto University (December 2005)
- Keynote speaker, Second International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics Crema, ITALY (September 2005)

- Keynote Speaker, Bioinformatics Conference, Atlanta, GA (November 2005)
- Keynote speaker BIOMAT Petropolis, Brazil (December 2005)
- Keynote speaker for the 16th International Conference on Genome Informatics (GIW 2005) December 19-21, Yokohama, Japan
- Invited speaker, Indiana University, Bloomington
- Invited speaker, Mitre Corporation
- Keynote speaker, Gubelkian Institute of Sciences, Portugal (June 2006)
- Invited speaker, University of Rome, Italy (June 2006)
- Invited speaker, University of Lisbon, Portugal (June 2006)
- Chemoinformatics Tutorial ISMB (Intelligent Systems for Molecular Biology) Conference, Fortaleza, Brazil (August 2006)
- Invited speaker, University of Naples, Italy (October 2006)
- Invited speaker, University of Benevento, Italy (October 2006)
- Invited speaker, Iowa State University (March 2007)
- Keynote speaker 2007 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology, Hawaii, (April 2007)
- Keynote speaker, Italian Conference on Bioinformatics, Naples, Italy (April 2007)
- Keynote speaker Physical and Chemical Foundations of Bioinformatics Methods, Dresden, Germany (June 2007)
- Invited keynote speaker, Conference on Physical and Chemical Foundations of Bioinformatics Methods, Dresden (June 2007)
- Invited speaker, Iowa State University, 2007
- Invite keynote speaker for the IEEE 2007 Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB), Honolulu, Hawaii (April 2007).
- Invited keynote speaker Italian Bioinformatics Conference, Naples, Italy (April 2007)
- Invited speaker workshop on Interdisciplinary Strategic Issues in e-Science and Cyber-Infrastructure, Caltech, Pasadena, California (June 2007)
- Invited speaker, University of Naples, Italy (June 2007)
- Invited speaker, University of Benevento, Italy (June 2007)
- Invited keynote speaker, 2007 International Conference on Machine Learning and Applications (ICMLA'07), Cincinnati, Ohio (December 2007).
- Invited distinguished speaker, Shumaker Bioinformatics Seminar of the Informatics Institute at the University of Missouri Columbia, Missouri (October 2007)
- Invited keynote speaker, BioSys Symposium on Human Post-Genomics, Evolution and the Future of Life held at the Royal Library, Copenhagen, Denmark (May 2008)
- Invited speaker, University College, Dublin, Ireland (June 2008)
- Invited speaker, Biogen, Italy (June 2008)
- Invited speaker, University of Salerno, Italy (June 2008)
- Invited keynote speaker, 2008 International Conference on Artificial Neural Networks (ICANN 2008), Prague, Czech Republic (September 2008)
- Invited member of the scientific committee of the 2nd International Workshops on Practical Applications of Computational Biology and Bioinformatics, Salamanca, Spain (October 2008)
- Invited distinguished speaker series, University of California, Riverside (June 2009)
- Invited speaker, Joint Statistical Meeting, Washington DC (August 2009)
- Invited speaker, University of Paris (September 2009)
- Invited speaker, Safra Program Distinguished Lectures Series, Tel Aviv University, Tel Aviv, Israel (March 2010)

- Invited plenary speaker, Clinical Genomic Analysis Workshop, IBM Research, Haifa, Israel (March 2010)
- Invited speaker, Hebrew University, Jerusalem, Israel (March 2010)
- Invited speaker, Bioinformatics Colloquium, UCLA (March 2010)
- Invited speaker, Computational Intelligence Methods for Data Analysis in Oncology Bioinformatics, Vietri sul Mare, Italy (May 2010)
- Director Erice Summer School in Bioinformatics (September, 2010)
- Invited speaker, University of Evry and Genopole, Evry, France (September 2010)
- Invited distinguished speaker, University of Alberta, Alberta Ingenuity Centre for Machine Learning, Edmonton, Canada (October 2010)
- Invited speaker, Information Theory and Applications Workshop, UCSD (February 2010)
- Invited speaker, Information Theory and Applications Workshop, UCSD (February 2011)
- Invited speaker, Institute for Pure and Applied Mathematics (IPAM), UCLA, Program on Navigating Chemical Compound Space for Materials and Bio Design (March 2011)
- Invited speaker, Institute for Pure and Applied Mathematics (IPAM), UCLA, Program on Navigating Chemical Compound Space for Materials and Bio Design (April 2011)
- Invited speaker, Center of Genomic Regulation, Barcelona, Spain (June 2011)
- Invited speaker, Invited speaker Bioinformatics Research Centre, Aarhus University, Denmark (June 2011)
- Invited speaker, International Conference on Machine Learning (ICML) Workshop on Unsupervised and Transfer Learning, Seattle, Washington (July 2011)
- Invited keynote speaker, 2011 Pattern Recognition in Bioinformatics Conference (PRIB November 2011), Delft, Netherlands (November 2011)
- Invited speaker, Chemical & Biomolecular Engineering Colloquium, University of California Berkeley, (November, 2011)
- Invited keynote speaker, NIPS workshop “From Statistical Genetics to Personalized Medicine”, Granada, Spain, December, 2011
- Invited speaker, Bioinformatics and Computational Biology Series, Iowa State University (ISU), Ames, Iowa, April, 2012
- Invited lecturer, Lipari Summer School in Computational Biology and Bioinformatics on Pharmacogenomics, Lipari, Italy, July 2012
- Invited keynote speaker, JOBIM 2012 Conference, Rennes, France (July 2012).
- Invited keynote speaker, ACM Conference on Bioinformatics and Computational Biology (ACM-BCB 2012), Orlando, Florida, (October 2012)
- Invited keynote speaker, Third Immunoinformatics and Computational Immunology Workshop (ICIW 2012), Orlando, Florida, (October 2012)
- Invited speaker, Amazon (November 2012)
- Invited speaker, Deep Learning, MIT (December 2012)
- Invited speaker, Deep Learning, Toronto University (December 2012)
- Invited speaker, Deep Learning, Cornell University (March 2013)
- Invited speaker, Deep Learning, Caltech (April 2013) [IST Lunch Bunch talk]
- Invited speaker, Deep Learning, UCSD (May 2013)
- Invited speaker, Course on Bayesian Methods and Neural Networks, Univeristy of Padova, Italy, (May 2013)

- Invited speaker, Deep Learning, Carnegie Mellon University (CMU-Pitt PhD program in Computational Biology (CPCB)) Aug, 2013
- Invited plenary speaker, 20-th anniversary of the Center for Biological Sequence Analysis, Technical University of Denmark (DTU), Copenhagen, Denmark (October 2013)
- Invited to the workshop on Learning Data Representation: Hierarchies and Invariance, McGovern Institute, MIT. Sponsored by the new Center for Brain Minds and Machines and the joint IIT-MIT Laboratory for Computational and Statistical Learning. MIT (November 2013)
- Invited speaker 2014 Tarragona International Summer School on Trends in Computing (July 2014)
- Invited speaker 2014 Summer School on RNA at Boston College (July 2014)
- Keynote speaker MLSB 2014 (Eighth International Workshop on Machine Learning in Systems Biology), Strasbourg, France, (September 2014)
- Invited speaker 2014 MLPM Summer School (Machine Learning for Personalized Medicine), Institut Curie, Paris, France, (September 2014)
- Invited speaker, NIPS Workshop on High-Energy Particle Physics, Machine Learning, and the HiggsML Data Challenge, Montreal, Canada, (December 2014)
- Invited speaker, Brigham Young University, UT in March 2015
- Keynote speaker joint session held by ICLR and AISTATS, May 9, 2015, in San Diego, CA
- Invited keynote speaker, Yandex Conference on Machine Learning in Applications, Berlin, Germany, October 2015.
- Invited speaker, Data Science Workshop, CERN, Switzerland, November 9-13, 2015.
- Invited speaker, Department of Bioinformatics, University of North Carolina, Charlotte, December 2015.
- Invited speaker, Chapman University, February, 2016.
- Invited Speaker, San Diego State University, February, 2016.
- Invited speaker, Distinguished Lecture Series, Computer Science Department, Wayne State University, March 22, 2016.
- Invited speaker, 1st Data Learning and Inference (DALI), Sestri Levante, Italy, March 30-April 1, 2016.
- Invited speaker, Scuola Normale Superiore, Pisa, Italy, April 1, 2016.
- Invited speaker, 99th Canadian Chemistry Conference and Exhibition, Halifax, Nova Scotia, June 7-9, 2016.
- Invited speaker, Computational & Systems Biology Seminar Series, UT Southwestern Medical Center, Dallas, Texas, June 12-13, 2016.
- Keynote speaker, 1st European Conference on Translational Bioinformatics, Copenhagen Denmark, April 25-27, 2016.
- Invited speaker, QBiC Symposium 2016, Senri Life Science Center, Osaka, Japan, September 5-7, 2016.
- Keynote speaker, Jubilee of Mercy for Professors, Symposium on the Technologies for Knowledge, Rome, Italy, September 7-11, 2016.
- Invited talk, University of Catanzaro, Italy, September 12, 2016.
- Keynote speaker, 22nd International Conference on Computing in High-Energy and Nuclear Physics, San Francisco, California, October 10-14, (2016).
- Keynote speaker, 15th IEEE International Conference on Machine Learning and Applications (ICMLA 2016), Anaheim, California, December 18-20, 2016.

- Invited lecture, Perelman School of Medicine, Department of Systems Pharmacology and Translational Therapeutics, University of Pennsylvania, Spring 2017.
- Keynote speaker, the 22nd International Conference on Computing in High Energy and Nuclear Physics (CHEP 2016), San Francisco, CA, October 10-14, 2016.
- Keynote speaker, 15th IEEE International Conference on Machine Learning and Applications (ICMLA 2016), Anaheim, CA, Dec 18-20, 2016.
- Invited talk, Firmeninch, Geneva, January 11, 2017.
- Invited Keynote Speaker, Machine Learning Prague conference, April 2017.
- Invited talk, Director's Colloquium Speaker, Physics Colloquium, Argonne National Laboratory, April 28, 2017.
- Keynote Speaker, "Braverman's Readings in Learning Theory and Related Areas", Boston, MA, April 28-30, 2017.
- Invited lecturer, Deep Learning Summer School, Bilbao, Spain, July 2017.
- Keynote speaker, 40th German AI Conference, Dortmund, Germany, September 2017.
- Keynote speaker, 16th Mexican AI Conference, Ensenada, Mexico, October 2017.
- Invited speaker, Smale Institute, Hong Kong, July 2018.
- Invited lecturer, Deep Learning Summer School, Genova, Italy, July 2018.
- Invited Inaugural Keynote Speaker, 41st National Conference on Biomedical Engineering, Leon, Mexico, October 18-20, 2018.
- Keynote Speaker, 6th Bench to Bedside Symposium, Arnold and Mabel Beckman Center, UCI, March 9, 2019.
- Keynote Panelist, Road to Reinvention 2019: Leadership in the Digital Age, Arnold and Mable Beckman Center, UCI, March 21, 2019 .
- Speaker, Deep Learning Workshop, Copenhagen, Denmark, April 7-11, 2019.
- Invited speaker, AAAS Pacific Division, 100th Annual Meeting, Southern Oregon University, Ashland, Oregon, June 18 - 21, 2019.
- Invited Keynote Speaker, Public Lecture on Artificial Intelligence, DESY, Hamburg, Germany, July 7, 2019.
- Invited speaker, Institute for Mathematical Behavioral Sciences, UCI. AI, Deep Learning, and Virtualization. February 21, 2020.
- Keynote Speaker, 16th IEEE International Conference on Computational Intelligence in Bioinformatics and Computational Biology, Certosa di Pontignano, Italy, July 9-11, 2019.
- Invited Colloquium Spealer, Department of Mathematics, UCLA, March 5, 2020.
- Invited Colloquium Speaker, Department of Mathematics, USC, March 6, 2020.
- Invited Keynote Speaker, AI for Reaction Outcome and Synthetic Route Prediction Conference, March 8-10, 2020, Bristol, UK.
- Invited Keynote Speaker, Fifty-First Southeastern International Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, Boca Raton, Florida, March 9-13, 2020.
- Invited Speaker, 90th Birthday Celebration for Stephe Smale, University of Michigan, Ann Arbor, July 12-15, 2020.
- Keynote Speaker, 3rd Advanced Course on Data Science & Machine Learning (ACDL 2020), Certosa di Pontignano (Siena) Tuscany, Italy, July 13-17, 2020.
- Invited Keynote Speaker, 6th International Conference on Machine Learning, Optimization & Data Science (LOD 2020), Certosa di Pontignano (Siena – Tuscany), Italy, July 19-22, 2020

- Invited Keynote Speaker, Workshop on “Biologically Plausible Learning”, Satellite Workshop at the 6th International Conference on Machine Learning, Optimization & Data Science (LOD 2020), Certosa di Pontignano, Siena, Italy, July 19, 2020.
- Invited Keynote Speaker, Lipari School on Computational Life Sciences, Lipari, Italy, July 25-August 1, 2020.
- Deep Learning Track Chair, 19th Mexican International Conference on Artificial Intelligence (MICA I 2020) , Mexico City, Mexico, October 12 to 17, 2020.
- Invited Keynote Speaker, National Colloquium on Artificial Intelligence, Mexico, Oct. 28th, 2020.
- Invited speaker, Meeting of the American Academy Society of Spine Radiologists (ASSR 2021), February 20, 2021.
- Invited speaker (Attention Mechanisms for Machine Learning in Physics), CERN Workshop, April 15, 2021.
- Invited speaker, NIH Workshop on Reaction Informatics, May 17-21, 2021.
- Invited Plenary Speaker, the 16th International Work-Conference on Artificial Neural Networks, IWANN 2021, June 16, 2021.
- Invited Keynote Speaker, 4th Advanced Course on Data Science & Machine Learning (ACDL 2021), Certosa di Pontignano (Siena) Tuscany, Italy, July 19–23, 2021.
- Invited Keynote Speaker, Conference on Mathematics of Machine Learning, Center for Interdisciplinary Research (ZIF), Bielefeld, Germany, August 4—7, 2021.
- Co-Chair workshop on “Multi-omics data integration for modeling biological systems”, 30th ACM International Conference on Information and Knowledge Management (CIKM2021), Queensland, Australia, November 1-5, 2021.
- Invited Keynote Speaker, 18th IEEE International Conference in Computational Intelligence in Bioinformatics and Computational Biology (CIBCB), Melbourne, Australia, October 13-15, 2021.
- Invited Keynote Speaker, The BIOMAT 2021 International Symposium on Mathematical and Biological Sciences. November 1 -5, 2021.
- Invited Speaker, Bioinformatics Seminar Series, Purdue University, Nov 18, 2021.
- Invited Keynote Speaker, AI and Bio-Medical Imaging, Foro Internacional de Tuberculosis, December 2, 2021.
- Invited Keynote Speaker, 5th Northern Lights Deep Learning Conference, 10-12 January 2022, Tromsø ("North Pole"), Norway.
- Invited Speaker, Institute for Applied Computational Science (IACS) Distinguished Lecture Series, Harvard University, March 4, 2022.
- Invited speaker, 100th Anniversary of the Italian Mathematical Union (UMI) and 800th Anniversary of the University of Padova, Padova, Italy, May 23-27, 2022.
- Invited speaker, Computer Laboratory, Cambridge University, (2022).
- Area Chair, IJCAI-ECAI 2022, Vienna, Austria, July 23-29, 2022.
- Invited Keynote Speaker, Lipari School on Computational Life Sciences, Lipari, Italy, July 24-30, 2022.
- Invited Keynote Lecturer, Deep Learn Summer School 2022, Las Palmas de Gran Canaria, Spain, July 25-29, 2022.
- Invited Plenary Speaker, 8th International Online & Onsite Conference on Machine Learning, Optimization & Data science (LOD 2022), Certosa di Pontignano, Castelnuovo Berardenga, Tuscany – Italy, September 19—22, 2022.
- Invited Keynote Speaker, 8th International Conference on Optimization and Applications, ICOA 2022, Sestri Levante, Italy, October 5-6, 2022.

- Invited Keynote Speaker, UCI-TAU Bio-Convergence 2030 Conference, Tel Aviv, Israel, November 14-15, 2022.
- Invited Speaker, Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), Abu Dhabi, United Arab Emirates, November 16-18, 2022.
- Invited Speaker, Owkin, Paris, France, November 22, 2022.
- Invited Speaker, KTH Royal Institute of Technology, Stockholm, Sweden, November 24, 2022.
- Invited Speaker, Department of Computer Science, Tromso University, Tromso, Norway, February 16-17, 2023.
- Invited Speaker, Bologna Winter School on Bioinformatics and Deep learning for Biodata Analysis, Bologna, Italy, February 22nd, 2023.
- Invited Keynote Speaker, Computing Day, University of Miami, FL, April 14th, 2023.
- Invited Keynote Lecturer, Deep Learn Summer School 2023, Las Palmas de Gran Canaria, Spain, July 17-21, 2023.

FUNDING

Grants and Gifts (Last Fifteen Years)

FUNDING SOURCE	ROLE	AMOUNT	DATES
NIH-NLM	PI	\$4,664,422	7/1/02-6/30/07
UC Systems BREP	PI	\$354,400	7/1/02-6/30/04
NIH-NCI	Co-PI	\$994,404	5/1/02-4/30/03
Newkirk Center for Science and Society	PI	\$16,000	3/1/02-2/28/03
Industry-University Cooperative Research Program	PI	\$15,000	7/1/02-6/30/03
Subcontract from UCLA (NIH)-30896	PI	\$30,000	9/1/01-8/31/03
UC Systems BREP	PI	\$5,000	7/1/02-1/31/03
Calit2	PI	\$4,000	7/1/02-6/30/03
NSF	Co-PI	\$34,080	4/1/01-3/31/03
Center for Virus Research	PI	\$6,000	7/1/02-6/30/03
Calit2 (fellowship for Marty Brandon)	PI	\$10,000	7/1/02-6/30/03
Subcontract from Columbia Univ. (NIH)	Co-PI	\$250,670	9/15/02-6/30/04
Subcontract from UCLA(NIH)-31150	PI	\$179,075	9/30/02-8/31/07
NIH	Investigator ¹	\$8,552	5/01/03-4/30/04
Calit2	PI	\$4,000	7/1/03-6/30/04
NSF EIA-0321390	PI	\$269,989	10/1/03-9/30/06
NSF EIA-0321390 equipment cost sharing from Cal IT2, ICS, IGB, and RGS	PI	\$115,714	10/1/03-9/30/06
NSF EF-0330786	Co-PI	\$4,939,337	9/1/03-8/31/08
NIH	Investigator ²	\$22,725	7/1/03-6/30/05
Industry/UC Coop Research Initiative	PI	\$5,000	1/26/04-6/30/05
Industry-University Cooperative Research Program	PI	\$9,225	7/1/04-6/30/05
NIH AI-56464	Investigator ³	\$14,541.35	8/1/03-1/31/05

NIH AI-65359	Investigator ⁴	\$24,087	5/20/05-4/30/06
NIH AI-61363	Investigator ³	\$28,699	9/1/04-8/31/06
NSF IIS-0513376	PI	\$293,538	7/15/05-6/30/08
NSF IIS-0514810	PI	\$170,848	9/1/05-8/31/08
NIH CA112560	Co-PI	\$1,809,537	8/1/05-5/31/10
Subcontract from UCSD 2005-3233 (DOD)	PI	\$123,439	10/1/05-9/29/06
Opportunity Grant from Industry-University Cooperative Research Program	PI	\$11,318	7/1/06-12/15/06
NIH GM079413	Investigator ⁵	\$28,548	3/12/07-2/28/09
UC Discovery from the Industry-University Cooperative Research Program and CODA Genomics, Inc.	Co-PI	\$1,677,139	9/1/07-8/31/09
NSF CCF-0725370	Co-PI	\$693,180	9/1/07-8/31/10
NIH-NLM 07443 (renewal)	PI	\$5,644,874	7/1/07-6/30/12
NIH GM-076516	Investigator ⁶	\$37,926	8/1/07-7/31/12
NIH P50 GM076516	Investigator ⁷	\$10,000	5/1/08-7/31/11
NIH AI61363	Investigator ⁸	\$40,000	9/1/08-8/31/09
ICS CRIA Award	PI	\$16,000	1/1/09-12/31/09
Camille and Henry Dreyfus Foundation	PI	\$ 31,000	3/1/09-2/28/11
IBM	PI	\$ 29,854	9/21/09-9/20/10
USC I08681	Investigator ⁹	\$ 14,144	12/1/09-11/30/10
Environment Institute Grant	Co-PI	\$18,499	1/1/10-6/30/11
NIH LM 07443-08S1	PI	\$ 95,000	1/1/10-12/31/10
NIH GM080506	Investiga-tor ¹⁰	\$30,600	1/1/10-12/31/11
NIH LM 07443-09S1	PI	\$ 216,000	7/1/10-6/30/11
Ping Wang Collaboration	Investigator	\$12,000	n/a
NIH LM 010235	PI	\$ 524,501	9/30/10-9/29/13
UCI Genomics High Throughput Facility	Bioinformatics Core Director	\$40,000	n/a
NIH R25 LM011170	PI	\$520,000	5/1/11-4/30/16
NIH GM074830	Investigator ¹¹	\$8,556	8/1/11-7/31/15
NIH GM096989	Investigator ¹²	\$22,265	8/1/11-3/31/16
CHOC-53614	PI	\$100,377	3/1/12-2/28/13
NIH AI099190	Investigator ¹³	\$157,827	4/1/12-3/31/17
NIH CA161807	Investigator ¹⁴	\$15,401	6/1/12-5/31/14
NIH P50 GM076516	Investigator ¹⁵	\$20,000	8/1/12-7/31/17
CHOC-53614 amended	PI	\$169,858	3/1/13-6/30/14
NIH AA021838	Investigator ¹⁶	\$251,949	1/1/13-12/31/14
NIH AR044882	Investigator ¹⁷	\$53,012	4/1/13-3/31/18
NIH GM33281	Investigator ¹⁸	\$15,154	4/1/13-3/31/15
NIH DA 036984	Investigator ¹⁹	\$233,289	7/1/13-3/31/17
NSF IIS-1321053	PI	\$449,999	8/15/13-7/31/16
NIH MH105398	Investigator ²⁰	\$63,302	6/17/14-7/31/17
NSF IIS-1550705	PI	\$150,000	9/1/15-2/28/17
DARPA HR0011-15-2-0045	PI	\$495,265	9/22/15-9/21/17
NSF NRT 1633631	Co-PI ²¹	\$2,967,150	9/15/16-8/31/21
DARPA HR0011624519-00	PI	\$598,966	12/29/16-12/28/18

D17AP00002			
NIH GM123558	PI	\$981,920	8/1/17-4/30/20
Argonne National Laboratory	PI	NA	2017-2018
NSF 1839429	Co-PI ²²	\$176,374	10/1/18-9/30/20
NIH GM123558-02S1	PI	\$75,000	5/1/18-4/30/19
NIH R01-HL144692	Co-I ²³	\$126,000	1/7/19-12/31/23
NIH 1 P30 AR075047-01	Co-I ²⁴	\$82,535	4/1/19-3/31/24
NIH 1R01AG057558	Co-I ²⁵	\$305,128	5/1/19-4/30/23
NIH DK114037-01A1	Co-I ²⁶	\$100,272	6/1/20-5/31/22
American Cancer Society RSG-17-215-01-CCE	Co-I ²⁷	\$46,855	1/1/20-12/31/20
ARO 76649-CS	PI	500,000	6/15/20-6/14/23
NSF 195811	Co-PI ²⁸	\$250,000	6/1/20-5/31/23
UC Emergency COVID-19 Research	Co-I ²⁹	\$10,000	6/1/20-6/1/21
ARO W911NF2010172	Co-PI ³⁰	\$25,848	7/1/20-10/31/21
NIH HL128801	Investigator ³¹	\$30,900	5/1/21-4/30/22
NIH RP1 EB029751	Co-I ³²	\$889,109	5/1/20-1/31/24
NIH R01GM123558	PI	\$1,307,626	6/1/23-5/31/27

¹PI (Hoda Anton-Culver), amount reflects total funding for my group only.

²PI (Suzanne Sandmeyer), amount reflects total funding for my group only.

³PI (Phil Felgner), amount reflects total funding for my group only.

⁴PI (Alan Barbour), amount reflects total funding for my group only.

⁵PI (Klemens Hertel), amount reflects funding for my group only.

⁶PI (Arthur Lander), amount reflects funding for my group only for the computational core.

⁷PI (Arthur Lander), amount reflects funding for Ivan Chang in my group.

⁸PI (Philip Felgner), amount reflects funding for my group only.

⁹PI (Steve Potkin), amount reflects funding for my group only.

¹⁰PI (Ken Shea), amount reflects funding for my group only.

¹¹PI (Lan Huang), amount reflects funding for my group only.

¹²PI (Frederic Wan), amount reflects funding for my group only.

¹³PI (Haoping Liu), amount reflects funding for my group only.

¹⁴PI (Lan Huang), amount reflects funding for my group only.

¹⁵PI (Arthur Lander), P50 renewal, amount reflects first two year funding for my group.

¹⁶PI (Chad Garner), amount reflects first year funding.

¹⁷PI (Bogi Andersen), amount reflects funding for my group only.

¹⁸PI (Suzanne Sandmeyer), amount reflects funding for my group only.

¹⁹PI (Marcelo Wood), amount reflects funding for my group only.

²⁰PI (Timothy Bredy), amount reflects first year funding for my group only.

²¹PI (Padhraic Smyth).

²²PI (Pramod Khargonekar), amount reflects funding for my group only.

²³PI (Maxime Cannesson, UCLA), amount reflects funding for my group only.

²⁴PI (Bogi Andersen), amount reflects funding for my group only.

²⁵PI (Carl Cotman), amount reflects funding for my group only.

²⁶PI (Kristin Eckel-Mahan, UT), amount reflects funding for my group only.

²⁷PI (Kristin Eckel-Mahan, UT), amount reflects funding for my group only.

²⁸PI (David VanVranken), amount reflects funding for my group only.

²⁹PI (Huolin Xin), amount reflects funding for my group only.

³⁰PI (Ann Marie Carlton, David Van Vranken) amount reflects funding for my group only.

³¹PI (Shaista Malik), amount reflects funding for my group only.

³²PI (Maxime Cannesson, UCLA), amount reflects funding for my group only.

Gifts

Company	Amount	Received
Sun Microsystems	\$5,000	10/02
Sun Microsystems	\$47,000 (hardware)	10/02
Illumina	\$1,000	9/03
Eli Lilly and Company	\$5,000	9/04
Amgen	\$1,000	9/04
Neurocrine Biosciences Inc.	\$400	9/04
Fisher Scientific	\$300	9/04
ImmPORT Therapeutics	\$2,500	8/05
ImmPORT Therapeutics	\$2,500	12/05
CODA Genomics	\$5,000	8/06
Microsoft	\$45,000	12/06
ImmPORT Therapeutics	\$5,000	12/07
ImmPORT Therapeutics	\$5,000	03/08
Antigen Discovery	\$5,000	09/08
Antigen Discovery	\$7,000	12/08
NVIDIA	\$5,000 (hardware)	04/11
Exxon	\$60,000	05/14
Google	\$64,581	08/14
DeepRadiology	\$100,000	11/15
Anivive	\$15,000 (hardware)	06/17
Anivive	\$40,000	07/17
Anivive	\$10,000 (hardware)	10/17
Anivive	\$10,000 (hardware)	10/19

Paid Consultancies and Reviews (Abridged)

Banque de France; TI Capital ; SmithKline-Beecham; Paracel; DE Shaw; Calspan; Ecobalance/Dames and Moore; Colosseum Fund; Banca del Salento; Elitra; Allergan; Genome Canada; San Antonio Life Sciences Institute; Fundacion BBVA, Spain; Italian Ministry for Education University and Research (MIUR); Pennsylvania Department of Health's Interim Performance Review; MIT Press; Cambridge University Press; Wiley; Harvard University; Mitre Corporation; Center for Biological Sequence Analysis, DTU, Denmark; Max Planck Institute for Biological Cybernetics, Germany; Christian Doppler Forschungsgesellschaft, Austria; Danish Agency for Science, Technology and Innovation; Quest Diagnostics; Strategy and Funding Directorate at the Health Research Board, Ireland; Hitchcock Foundation (Dartmouth); Pimco; Trond Mohn Foundation, Norway; Deep Radiology, Anivive Lifesciences, MBZUAI.

Entrepreneurial Activities (available upon request)

Editorial Activities (Abridged)

- Neural Networks (Member Editorial Board, Associate Editor) (1995-)
- Data Mining and Knowledge Discovery (Associate Editor) (2006-2021)
- International Journal of Bioinformatics Research and Applications (Member Editorial Board) (2003-2008)
- Data Mining and Knowledge Discovery (Member Editorial Board) (2002-)
- Chemistry Central Journal (Member Editorial Board, Founding Editor) (2006-2010)
- Journal of Chemical Information and Modeling (Member Editorial Board) (2008-2011)
- IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB) (Associate Editor) (2013-)
- Artificial Intelligence Journal, Associate Editor (2017-).

Reviewer Activities (Abridged)

- Reviewer for NIH, NSF, and other agencies (Portuguese Science Foundation, Italian Science Foundation, etc)
- Standing member of the NIH Biodata Management and Analysis Study Section [BDMA] with a six-year term [7/1/2012 through 8/16/2018]. Chair of the Section starting in July 2014.
- Reviewer for multiple journals including Science, Science Advances, Nature, Nature Communications, Nature Machine Intelligence, Physical Review Letters, IEEE Transactions on Information Theory, IEEE/ACM Transactions on Computational Biology and Bioinformatics, IEEE Transactions on Neural Networks, Neural Computation, Artificial Intelligence, Data Mining and Knowledge Discovery, Journal of Computational Biology, Journal of Molecular Biology, Bioinformatics, Proteins, Genome Research, Nucleic Acids Research, , CABIOS.

Other Activities (Abridged)

- Advisory Board, DNA Microarray Core, UCI
- Advisory Board Genomics High-Throughput Facility, UCI
- Scientific Advisory Board, Max Plank Institute for Biological Cybernetics, Tubingen, Germany
- Organizer of session “DNA Structure and Protein-DNA Interactions” at the Pacific Symposium on Biocomputing, Hawaii, January 3-7, 2001
- Organizer of session “Bioethics and Fiction Science” at the Pacific Symposium on Biocomputing, Hawaii, January 3-7, 2001
- On the organizing committee of the 33rd Symposium on the Interface of Computer Science and Statistics (Interface 01), Frontiers in Data Mining and Bioinformatics, June 13-16, Costa Mesa, CA, (2001). Organizer of special one-day workshop on Bioinformatics. Presentation of a tutorial on Bioinformatics
- On the program committee of the 1987 to 1992 Conferences on Neural Information Processing (Denver, CO), of the 1990 and 1993 International Joint Conference on

Neural Networks (Washington, D.C. and Portland, Oregon), and of the 1993-2011 Learning Conference (Snowbird, UT)

- Co-organizer of the NIPS (Neural Information Processing Systems) Workshop on Revealing Hidden Elements of Dynamical Systems, Whistler, BC, Canada, (December 2006)
- Organizer of the Symposia of the UCI Institute for Genomics and Bioinformatics such as the Synthetic Biology Symposium, Laguna Beach, CA (September 2006), the Mobile DNA Symposium at UCI (February 2010), the HTS to P4 Medicine Symposium at UCI (February 2011)
- Co-Organizer and Member Executive Committee for the 2007 International Conference on Systems Biology (Long Beach, CA 2007)
- Member of the Program Committee of the 6th Georgia tech International Conference on Bioinformatics—In Silico Biology: Gene Discovery and Systems Genomics (November 2007)
- Member of the Program Committee of yearly Learning Conference (1993-to present)
- Member of the Steering Committee of CIBB 2007
- Member of the Scientific Committee of the 2nd International Workshops on Practical Applications of Computational Biology and Bioinformatics, Salamanca, Spain (October 2008)
- Member Scientific Committee Italian Society for Neural Networks (2008 to present)
- Program Committee, Eighth Computational Systems Bioinformatics Conference (CSB2009), Stanford, CA, August 2009
- Co-organizer NIPS 2010 Workshop on Charting Chemical Space: Challenges and Opportunities for Artificial Intelligence and Machine Learning, Whistler, Canada, December 2010
- Co-director and co-organizer of the European Bioinformatics Summer School, Erice, Italy, (September 2010)
- Co-chair of new track on AI and Bioinformatics, AAAI-2010
- Co-organizer of the NIPS (Neural Information Processing Systems) Workshop on Charting Chemical Space: Challenges and Opportunities for AI and Machine Learning, Whistler, BC, Canada (December 2010)
- Advisory Board of ACM SIGBioinformatics (2009 to 2014).
- Co-organizer of ICML workshop on Personalized Medicine, Edinburgh, UK, (July 2012).
- Co-chair Advisory Board of ACM SIGBioinformatics (2013-present)
- Member of Scientific Council, Department of Bioinformatics and Systems Biology, Institut Curie and INSERM and Ecole des Mines ParisTech, 2010-2011
- Member Scientific Committee 5th International Conference on Practical Applications of Computational Biology and Bioinformatics (PACBB11), Salamanca, Spain, (2011)
- Member Institute for Mathematical Behavioral Sciences, UCI (2001-present)
- Scientific Advisory Board Max Planck Institute for Biological Cybernetics, Tübingen
- Scientific Advisory Board of Sapient Discovery
- Member American Chemical Society Division of Chemical Information Awards Committee (2011)
- Co- Organizer of the First International Workshop: Deep Learning: Theory, Algorithms, and Applications, Shonan, Japan, (May 2013)

- Co-Organizer and Co-Chair of the first UCI microbiome symposium: Microbiome Connections to Health and Disease (September 24, 2013).
- Program Member, 1st International Conference on Algorithms for Computational Biology (AFCB 2014), Tarragona (Spain), (July 2014)
- Co-Chair and Organizer of the 5th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (ACM-BCB), Newport Beach, CA, (September 2014)
- Member of the Advisory Board for the Fudan University Center for Clinical Bioinformatics
- Member Advisory Board of campus-wide UCI Data Science Initiative (April 2014-)
- Co-Organizer and Co-Chair of the second UCI microbiome symposium: Microbiome Connections to the Environment, Health, and Disease (September 19, 2014).
- Co-Organizer of the Second International Workshop: Deep Learning: Theory, Algorithms, and Applications, Bertinoro, Italy, (May 2015)
- Member Program Committee of the 2nd International Conference on Algorithms for Computational Biology (AlCoB 2015) in Mexico DF, June 30 – July 2, 2015.
- Advisory Board, Fundamental Learning.
- Co-organizer Southern California Machine Learning Symposium, UCI, Irvine, CA, May 20, 2016.
- Co-Organizer of the Third International Workshop: Deep Learning: Theory, Algorithms, and Applications, MIT, Boston, (June 2016).
- Co-Chair, Intelligent Systems for Molecular Biology (ISMB) Conference, Orlando, Florida, July 8-12, 2016.
- Member of the Program Committee for the 2016 Knowledge Discovery and Datamining (KDD) Workshop on Large-scale Deep Learning for Data Mining, San Francisco, CA, August 14, 2016.
- Member Steering Committee, 13th International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics, Stirling, UK, Sept 1-3, (2016).
- Co-Organizer of the Fourth International Workshop: Deep Learning: Theory, Algorithms, and Applications, Berlin, Germany, (June 2017).
- Member of the Program Committee for the 2017 Workshop on Computer Based Processes and Algorithms for Biomedicine and Life Quality Improvement (CBPBL), 2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), Nov. 13-16, 2017.
- Co-Organizer of the Fifth International Workshop: Deep Learning: Theory, Algorithms, and Applications, Tokyo, Japan, (March 2018).
- Advisory Board Member, ACM SIGBio (2012- present)
- Member Program Committee for the Workshop on Computer Based Processes and Algorithms for Biomedicine and Life Quality Improvement (BPBL) 2018, 2019, and 2020.
- Advisory Board of EU Project BrainTeaser.
- Area Chair for the 31st International Joint Conference on Artificial Intelligence (IJCAI-ECAI 22), Vienna, Austria.
- Co-Organizer of the Sixth International Workshop: Deep Learning: Theory, Algorithms, and Applications, Trento, Italy, (June 2023).

Society Memberships and Fellowships

- Member and Elected Fellow of the American Association for the Advancement of Science (AAAS)
- Member and Elected Fellow of the Association for the Advancement of Artificial Intelligence (AAAI)
- Member and Elected Fellow of the Institute of Electrical and Electronic Engineers (IEEE)
- Member of the American Chemical Society (ACS)
- Member and Elected Fellow of the Association for Computing Machinery (ACM)
- Member and Elected Fellow of the International Society for Computational Biology (ISCB)

Mentoring

Current PhD Students, Programmers, and Postdoctoral Fellows

- Sherif Abdelkarim
- Antony Alexos
- Kousha Changizi Ashtiani
- Mirana Claire Angel
- Yuzo Kanomata
- John B. Lanier
- Junze Liu
- Ryan Miller
- Edgar Eduardo Robles
- Alexander Shmakov

Graduated PhD Students, Postdoctoral Fellows, and Researchers (Primary Advisor, Past 15 years)

- Forest Agostinelli, University of South Carolina
- Alessio Andronico, University of Paris VI
- Chloe Azencott, Mines ParisTech, Institut Curie, and INSERM
- Kevin Bache, Google
- Pierre-François Baisnée, Institut de Recherche pour le Développement, France
- Ryan Benz, Applied Proteomics
- Martin Brandon, ADNET Systems
- Andrew Brethorst, The Aerospace Corporation
- Nicholas Ceglia, Memorial Sloan Kettering Cancer Center
- Ivan Chang, University of California, Irvine
- Siwei Chen, Amazon
- Jonathan Chen, Stanford University
- Jianlin Cheng, University of Missouri
- Julian Collado, Blackberry-Cylance
- Kenneth Daily, Amazon
- Pietro Di Lena, University of Bologna and Cesena, Italy

- Yimeng Dou, Verdezyn
- David Fooshee, NeoGenomics
- Steven Hampson, Deceased
- Lars Hertel, LinkedIn
- Qian-Nan Hu, Shanghai Institutes for Biological Sciences
- Raja Jurdak, CSIRO, Brisbane, Australia
- Matt Kayala, Google
- Christine Lee, Edwards Life Science
- Lingge Li, Facebook
- Erik Linstead, Chapman University
- Yu Liu, Google
- Yadong Lu, Microsoft
- Alessandro Lusci, Viant Inc.
- Christophe Magnan, NeoGenomics
- Antonio Maratea, University of Naples-Parthenope, Italy
- Stephen McAleer, Carnegie Mellon University
- Ken Nagata, Google
- Ramzi Nasr, comScore
- Jordan Ott, Path Robotics
- Vishal Patel, The Retail Equation
- Gianluca Pollastri, University College Dublin, Ireland
- Liva Ralaivola, Criteo and University of Provence/Aix-Marseille I, France
- Arlo Randall, Antigen Discovery
- Paul Rigor, Osprey Data
- Alex Sadowsky, Defense Logistics Agency
- Peter Sadowski, University of Hawaii
- Muntaha Samad, Raytheon
- Suman Sundaresh, LinkedIn
- S. Joshua Swamidass, Washington University, Saint Louis
- Mike Sweredoski, Caltech
- Amin Tavakoli, Caltech
- Gregor Urban, Google
- Eric Wang, Tandem Diagnostics
- Lin Wu, Kunming University of Science and Technology
- Michael Zeller, Google

UCI Academic Service

UCI Academic Service (examples from last 12 years)

- Conflict of Interest Oversight Committee
- Privilege and Tenure Committee
- Donald Bren Hall space committee
- Committee for Statistics
- Organizer of annual IGB Symposium and annual IGB Distinguished Speaker Series
- Helped develop and create new concentration: Informatics in Biology and Medicine
- Helped develop and create new BS: Biomedical Computing
- Founding Director Institute for Genomics and Bioinformatics (IGB) from 2001 to present. Under Dr. Baldi leadership, the current annual operating budget of the IGB is about 2.5M and the total amount of funding received directly by the IGB exceeds

35M. Supervise staff of the IGB. Organize research, education, fundraising, outreach, incubator and technology transfer activities of the IGB. Host visitors. Organize IGB symposia and speaker series.

- Associated Founding Director of the Center for Machine Learning and Intelligent Systems. Helped develop the AI and Machine Learning curriculum
- Organizer of Chancellor Distinguished Lecture (Eric Lander, Marvin Minsky)
- Layer Leader (Digitally Enabled Genomic Medicine), Calit2
- Member of the Review Committee for QB3 the California Institute for Quantitative Biosciences [UCSC, UCSF, UCB]
- Member of the Review Committee, Department of Computer Science and Engineering, UCSD
- Director of the UCI BIT Program (2002-2013). Creation, administration, and oversight of the NIH/NLM-sponsored BIT (Biomedical Informatics Training) Program of the Institute for Genomics and Bioinformatics, involving the School of Medicine, the School of Biological Sciences, the School of Physical Sciences, the School of Engineering, and the School of Information and Computer Science. Organizer of annual BIT symposium. The BIT Program has over 70 alumni.
- Director of the NIH-Sponsored UCI Summer BIT Program (2011-2015). Each year the program selects 6-8 promising undergraduate students from underrepresented minorities from local colleges and places them in UCI laboratories to conduct research projects over the summer, together with other training activities, followed by a symposium in the presence of the students' families.
- Advisory Board of, DNA Microarray Core, UCI (2005-2008)
- Advisory Board of the Genomics High-Throughput Facility (GHTF), UCI (2009-present)
- Responsible for the GHTF data management, storage, and analysis pipeline
- Responsible for IGB Distinguished Speaker Series and Symposia from 2001-to – present.
- Participant in the UCI MSTP ND/PhD program by training two MD/PhD students (S. J. Swamidass and J. Chen)
- Member of Committee Charged with Five-Year Administrative Review of a Dean (2008)
- Member of UCI Research Advisory Council (2007-2008)
- Continuing Member of Privilege and Tenure Committee (PTA) (2004-2010)
- Member Privilege and Tenure Complaint Advisory Panel (2010-2013)
- Member Search Committee for the Dean of the School of Physical Sciences (2010)
- Member of Systems Biology Council (2010-present)
- Advisor Search Committee, Department of Pharmacology (2009-2010)
- Associate Director of the Center for Machine Learning and Intelligent Systems (2006 to present)
- ICS Research Committee (2008-2009)
- Developed new course: Elements of Scientific Writing
- Coordinator of IBAM (Informatics in Biology and Medicine) concentration in the UCI School of ICS
- Member Computer Science Building Screening Committee
- Member Space Allocation Committee
- Developed original proposal for new Biomedical Computing BS degree
- Developed new seminar course in Chemoinformatics
- Chair Bioinformatics Search Committee (2006-2007 and 2007-2008)

- Supervision during the summer of talented students from a local high schools. For instance, Winston Chang and Ankit Modi from Troy High School in Fullerton, CA did a project in the Baldi laboratory during the Summer of 2006. Under the supervision of BIT M.D/Ph.D. student Jonathan Chen, they participated in the annual Siemens Foundation Competition reaching the level of semifinalists. Winston was accepted to Harvard and Modi to UC Berkeley. During Summer 2011, Dr. Baldi supervised Hussain Jafari and Venudhar Ravishankar from Irvine's University High School. Both participated in the Siemens Foundation Competition.
- Member of the Dean's Council for Genomic Medicine
- Member of the Systems Biology Council for the recruitment of several positions (2009-2013).
- Wrote report for UCI Dean of the Donald Bren School of Information and Computer Sciences
- Complaint Advisor for the Privilege and Tenure Committee to help address difficult cases (2010- 2013)
- Development of new course ICS 274C/172 Neural Networks and Deep Learning
- Member CS student admission committee (June 2013-June 2016).
- Participated in Fall Alumni Event at Thales Electronics (November 2014)
- Regular service on academic personnel cases (e.g. chair 2016 ad hoc committee for renewal of appointment of Dr. Deva Ramanan, David Eppstein, Dan Hirschberg in 2015-2016).
- Member Faculty Search Committee (Midcareer Professor Hiring Initiative), 2016-2017.
- Member UCI Subcommittee on International Education (2015-2018).
- Represented the UCI School of Information and Computer Sciences at the Annual Stars of the Future Gala, in support of undocumented students in 2015 and 2016.
- 1999 – Present: Regularly organizes and plays in mixed student/faculty music bands for various UCI events. Participated in the World Music Concert in the Crystal Cove Auditorium in Spring 2015, 2016, and 2017. Performed at the UCI Microbiome Symposium (September 2016 and September 2017) in Calit2, and at ICS student reception events in Bren Hall.
- 2010 – Present Interviewer for the MSTP (Medical Scientist Training Program) of the UCI School of Medicine