NIH and NSF formatted bio-sketches are attached.

Shoumen Palit Austin Datta

NIH (National Institute of Health) BIOGRAPHICAL SKETCH

Provide the following information for the senior/key personnel and other significant contributors. **DO NOT EXCEED FIVE PAGES**.

NAME: Datta, Shoumen Palit Austin

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Research Affiliate

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion MM/YYYY	FIELD OF STUDY
Presidency College, University of Calcutta, India	B.Sc.	08/1980	Biochemistry and Physiology (Physics and Chemistry)
Rutgers University School of Medicine, New Jersey, USA	Ph.D.	07/1989	Molecular Biology, Microbiology & Virology
Harvard Medical School, Massachusetts General Hospital, Boston, Massachusetts, USA	Fellow in Medicine	06/1991	Molecular Medicine: Thyroid and Neuro-Endocrinology, Molecular Oncology
Massachusetts Institute of Technology, Whitehead Institute, Cambridge, Massachusetts, USA	Postdoctoral Associate	11/1994	Molecular Biology and Human Genome Project
University of California San Francisco (UCSF), CA, USA	Research Associate	12/1995	Molecular Parasitology and Infectious Diseases

A. Personal Statement

My background includes basic science, biomedical sciences, molecular biology and medicine, in addition to bit of engineering and commerce. Scientific training includes [I] human genome project (DNA sequencing, creating yeast artificial chromosomes), [II] transcriptional regulation and genetics [{1} regulation of gene expression by DNA tumor virus oncogenes, {2} yeast genetics for transcription factor analysis in vivo, {3} in vitro reconstitution of transcription initiation complex, {4} protein chemistry of eukaryotic transcription factors, {5} recombinant protein expression in and purification from baculovirus, {6} regulation of thyroid hormone receptor gene expression in patients with thyroid carcinoma, {7} glucocorticoid and steroid receptor gene expression in pituitary carcinoma, {8} molecular parasitology of infectious diseases using parasite Trypanosoma brucei]. I have also used my (A) basic science fundamentals to build bridges into engineering domains (radio frequency, data and decisions, networks, systems, operations and industrial management) and (B) communication skills in {i} administration of public science education {ii} workforce development issues in state and federal government and {iii} advising corporations and friendly foreign governments (Finland, Ireland, Taiwan, to name a few).

My penchant for science and research, as a lifelong purpose, is unchanged but strengthened by my collective experience in science, medicine, engineering, commerce and government or wherever the convergence of knowledge, communication and administration was/is necessary as a part of the mission. My lack of overt greed for personal wealth creation, my ability to perform as a relatively unbiased science and engineering observer and my ability to view issues as a "global" citizen with a moderate sense of the future, are reasons for my involvement with consortiums involving global academia, industry and governments, on a range of topics such as standardization of radio frequency identification, internet of things and industrial internet, data and semantics, operations and supply change management. The confluence of ideas in the proposed research seeks trans-disciplinary convergence to create end-to-end systems that I have discussed, in principle, in my publications, and exemplified in practice as a member of the hospital medical device community where the problems of data and failure of data interoperability in decision systems are contributing to fatal mistakes (which makes the latter the third leading cause of death in the US). During 2008-2009 my life was gravely disrupted by colon cancer. After a few years of convalescence, I resumed my activities with encouragement from friends (Sanjay Sarma, Joe Salvo) and re-started advising in science, technology and engineering as well as teaching (operations management, supply chain, decision systems, innovation, entrepreneurship). I also re-engaged in research publications with erudite collaborators (Eric Scott McLamore) to further my professional horizon, in the realm of global public goods, enabling the tools of science to better serve society.

Selected Publications in Support of Personal Statement

01. Datta, S. (2020) Porous Pareto Partitions in '*Advances in Measurements and Instrumentation: Reviews*', Vol. 2, Book Series, IFSA Publishing, Barcelona, Spain (*in press*). Draft copy "P3" from MIT Libraries - https://dspace.mit.edu/handle/1721.1/123984

02. Victoria Morgan, Lisseth Casso-Hartman, David Bahamon-Pinzon, Kelli McCourt, Robert G. Hjort, Sahar Bahramzadeh, Irene Velez-Torres, Eric McLamore, Carmen Gomes, Evangelyn C. Alocilja, Shoumen Palit Austin Datta and Diana C. Vanegas (2019) *Sensor-as-a-Service: Convergence of Sensor Analytic Point Solutions (SNAPS) and Pay-A-Penny-Per-Use (PAPPU) Paradigm as a Catalyst for Democratization of Healthcare in Underserved Communities.* Diagnostics 2020, 10 (1), 22 https://doi.org/10.3390/diagnostics10010022 "SNAPS TRILOGY" MIT Libraries https://dspace.mit.edu/handle/1721.1/123983

03. Eric S. McLamore, R. Huffaker, Matthew Shupler, Katelyn Ward, Shoumen Palit Austin Datta, M. Katherine Banks, Giorgio Casaburi, Joany Babilonia, Jamie S. Foster (2019) Digital Proxy of a Bio-Reactor (DIYBOT) Combines Sensor Data and Data Analytics for Wastewater Treatment and Wastewater Management Systems. *Nature Science Reports* 10, 8015 (2020). https://doi.org/10.1038/s41598-020-64789-5 ◆ PDF from MIT Libraries https://dspace.mit.edu/handle/1721.1/123983

04. McLamore, E.S., S.P.A. Datta, V. Morgan, N. Cavallaro, G. Kiker, D.M. Jenkins, Y. Rong, C. Gomes, J. Claussen, D. Vanegas, E.C. Alocilja (2019) SNAPS: Sensor Analytics Point Solutions for Detection and Decision Support. *Sensors*, vol. 19, no. 22, November 2019, p. 4935 ◆ www.mdpi.com/1424-8220/19/22/4935/pdf ◆ https://dspace.mit.edu/handle/1721.1/123983

05. Y. Rong, A.V. Padrona , K. J. Hagerty , N. Nelson, S. Chic, N. O. Keyhani, J. Katz , S.P.A. Datta, C. Gomes, and E.S. McLamore (2018) Post Hoc Support Vector Machine Learning for Impedimetric Biosensors Based on Weak Protein–Ligand Interactions. *The Analyst*, vol. 143, no. 9, 2018, pp. 2066–2075 doi:10.1039/C8AN00065D https://pubs.rsc.org/en/content/getauthorversionpdf/C8AN00065D

06. Datta, S. (2017) *Haphazard Reality – IoT is a Metaphor* • MIT Libraries - https://dspace.mit.edu/handle/1721.1/111021

07. Datta, S. and Goldman, J.M. (2017) Healthcare - Digital Transformation of the Healthcare Value Chain: Emergence of Medical Internet of Things (MIoT) may need an Integrated Clinical Environment, ICE (World Health Strategy e-book ● www.fhti.org) Listed as (pdf) "Healthcare" - MIT Libraries - https://dspace.mit.edu/handle/1721.1/107893

08. Datta, S. *et al* (2017) Technology Assessment – Internet of Things ▪ www.gao.gov/products/GAO-17-75

09. Datta, S. (2015) L'Internet des Objets : la troisième révolution industrielle. *Logistique and Management* 23 n°3 29-33 DOI: 10.1080/12507970.2015.11742760 ● http://www.tandfonline.com/doi/abs/10.1080/12507970.2015.11742760

10. Datta, S. (2011) Future of Healthcare: Bio-Informatics, Nano-Sensors and Emerging Innovations (Chapter 8 in *Nanosensors: Theory and Applications in Industry, Healthcare & Defense* ed TC Lim) CRC Press http://dspace.mit.edu/handle/1721.1/58972 http://www.crcpress.com/product/isbn/9781439807361 and http://esd.mit.edu/WPS/2008/esd-wp-2008-17.pdf

11. Datta, S., Graham, D.P., Sagar, N., Doody, P., Slone, R. and Hilmola, O-P. (2009) Forecasting and Risk Analysis Supply Chain Management: GARCH Proof of Concept (Chapter 10 in *Supply Chain Risk and Vulnerability: Tools and Methods for Supply Chain Decision Makers* editors Wu, T. and Blackhurst, J.) Springer-Verlag http://dspace.mit.edu/handle/1721.1/43948

12. Datta, S. (2007) Unified Theory of Relativistic Identification of Information in a Systems Age: Proposed Convergence of Unique Identification with Syntax and Semantics through Internet Protocol version 6 (ESD-WP-2007-17) *International Journal of Advanced Logistics* 1 66-82 MIT ESD http://dspace.mit.edu/handle/1721.1/41902

13. Datta, S. (2007) Advances in Supply Chain Management: Potential to Improve Forecasting (ESD-WP-2006-11)

14. Datta, S., Granger, C. W. J., Barari, M. and Gibbs, T. (2007) Management of Supply Chain: an alternative modeling technique for forecasting. *Journal of the Operational Research Society* 58 1459-1469 http://dspace.mit.edu/handle/1721.1/41906 Online published version http://www.tandfonline.com/doi/full/10.1057/palgrave.jors.2602419

15. Datta, S. (2006) Advances in Supply Chain Management Decision Support Systems: Potential for Improving Decision Support Catalyzed by Semantic Interoperability between Systems (ESD-WP-2006-10) http://dspace.mit.edu/handle/1721.1/41906

16. Datta, S., and Granger, C. W. J. (2006) *Improvements in Forecasting.* MIT Engineering Systems Division Working Paper on Econometrics in Operations Research and Supply Chain Management https://dspace.mit.edu/handle/1721.1/102799

17. Datta, S. (2006) Charlie's Skypeout Strategy (TEKES Report, Govt of Finland) http://dspace.mit.edu/handle/1721.1/56251

18. Datta, S. (2004) Adapter, optimiser, prévoir - La convergence des concepts, des outils, des technologies et des normes peut-elle accélerer l'innovation*? Logistique and Management* 12 n°2 (http://dspace.mit.edu/handle/1721.1/41907)

19. Datta, S., *et al* (2003) Adaptive Value Network (Chapter 1 in *Evolution of Supply Chain Management: Symbiosis of Adaptive Value Networks and ICT* (Information Communication Technology). www.wkap.nl/prod/b/1-4020-7812-9?a=1

20. Waltar AE, Beaumont P, Earl B, Peddicord KL, Datta S. 1999. What The Public Wants to Know. Proc American Nuclear Society, CA.

21. Datta, S. (1998) National Task Force (US) Report. US Department of Commerce & ITAA, Washington, DC

22. Datta, S. (1996) Good Teaching [Letter] Science 271 1789

23. Datta S, Magge S, Madison L, Jameson JL. 1992. Thyroid Hormone Receptor Mediates Transcriptional Activation and Repression of Different Promoters. Molecular Endocrinology 6 815-825 http://dspace.mit.edu/handle/1721.1/42834

24. Datta S, Soong CJ, Wang DM, Harter ML. A purified adenovirus 289-amino-acid E1A protein activates RNA polymerase III transcription in vitro and alters transcription factor TFIIIC. J Virol. 1991 Oct;65(10):5297-304. doi: 10.1128/JVI.65.10.5297-5304.1991. PMID: 1832723; PMCID: PMC249009. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC249009/pdf/jvirol00053-0181.pdf http://jvi.asm.org/cgi/reprint/65/5297

25. Putlitz J, Datta S, Madison L, Jameson JL. 1991. Human Thyroid Hormone Receptor Produced in Recombinant Baculovirus-infected Insect Cells. Biochem & Biophys Research Communication <u>175</u> 285-290 http://dspace.mit.edu/handle/1721.1/42901

26. Chatterjee VKK, Nagaya T, Datta S, Madison L, Rentoumis A, Jameson JL. 1991. Thyroid Hormone Resistance Syndrome: Inhibition of Normal Receptor Function by Mutant Thyroid Hormone Receptors. J. of Clinical Investigation <u>87</u> 1977-1984 http://dspace.mit.edu/handle/1721.1/42900

27. Nagaya T, Chatterjee VKK, Madison L, Datta S, Rentoumis A, Jameson JL. Generalized Thyroid Hormone Resistance. MGH Symposium, 1991. Boston.

28. Datta S, Magge S, Putlitz J, Jameson JL. Transcriptional activation and repression by thyroid hormone receptors: Development of an *in vitro* transcription assay. MGH Symposium, 1991. Boston, MA.

29. Datta S, Magge S, Putlitz J, Jameson JL. Repression of a-TSH promoter activity by thyroid hormone receptor in an in vitro transcription assay. Endocrine Society Meetings, 1991. Washington, DC.

30. Nagaya T, Datta S, Madison L, Ahlquist JAO, Magge S, Hwang YT, Jameson JL. Structural determinants of thyroid receptor interactions with DNA. American Thyroid Association 1991. Boston.

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32. Datta S, Wang DM, McGrath M, Westerdahl C, Harter ML. Bacterially produced E1A 289R activates Pol III transcription through TFIIIC. Imperial Cancer Research Fund (ICRF) Tumor Virus Meeting, 1989. Churchill College, University of Cambridge, UK.

33. Datta, S. (1989) Transcriptional Activities of the 289 amino acid Adenovirus 2 E1A Protein in vitro (PhD thesis) Rutgers University School of Medicine, UMDNJ Graduate School of Biomedical Sciences, Rutgers University, New Jersey, USA

34. Datta S, Chatterjee P, Losada MC, Flint SJ, Harter ML. An E. coli produced E1A 289R protein and a synthetic E1A 49R peptide variably regulates Pol II and Pol III transcription in vitro. Tumor Virus Meeting, 1988. Cold Spring Harbor Lab, NY.

35. Datta S, Spangler R, Bruner M, Harter ML. Activation of viral and non-viral promoters by the Adenovirus 289R E1A protein in cell-free extracts. Imperial Cancer Research Fund (ICRF) Tumor Virus Meeting, 1987. Churchill College, University of Cambridge, UK.

B. Positions

1999-present (with breaks)
Research Affiliate, Auto ID Labs, Department of Mechanical Engineering, MIT ▪ https://autoid.mit.edu/shoumen-datta
2000-2010
Research Scientist, Engineering Systems Division, Department of Civil and Environmental Engineering • Co-Founder and Executive Research Director, MIT Forum for Supply Chain Innovation, School of Engineering, Massachusetts Institute of Technology
2014-present
Senior Scientist, MDPnP Lab ▪ http://mdpnp.mgh.harvard.edu ▪ Massachusetts General Hospital, Harvard Medical School
2015-present
NSF Center on Robots and Sensors for Human Well Being (RoSeHuB), School of Engineering Technology, Purdue Polytechnic, Purdue University ▪ https://www.purdue.edu/rosehub/RoSeHUB.contact.html
2018-present
Research Coordinator, Center of Excellence, Dept Ag & Bio Eng, University of Florida ▪ https://emclamor.wixsite.com/mclamorelab
1999-present (with breaks)
Research Affiliate, Auto ID Labs, Department of Mechanical Engineering, MIT ▪ https://autoid.mit.edu/shoumen-datta
1999 - 2002
Software Solutions, Global Strategic Innovation, Initiatives, SCM Management ▪ SAP Labs (Palo Alto, CA), SAP Germany & SAP Japan
1995-1997 Special Assistant [Title XIV], Superintendent of Schools, City and County of San Francisco, San Francisco, California
1994-1995 Research Scientist, University of California at Berkeley and UCSF School of Medicine (San Francisco, California)
UCSF-UC Berkeley Program in Molecular Parasitology & Infectious Diseases ● Instructor in Human Genetics UCSF School of Medicine
1991-1994 Research Associate, Whitehead Institute, Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts
1990-1993 Instructor in Medicine (Biochemistry and Metabolism), Harvard Medical School, Boston, Massachusetts
1989-1991 Research Fellow, Harvard University ● Research Fellow in Medicine, Massachusetts General Hospital, Boston, MA

Professional Experiences

1999-2004 MIT Auto ID Center, Founding Member, Technology Board ● IoT (Internet of Things) & RFID (radio frequency id)
2001-2010 MIT Forum for Supply Chain Innovation (Co-Founder, Executive Director, Research Director) ● Digital Supply Chain
2002-2007 MIT Sloan School of Management, Executive Education in Strategy and Management, Supply Chain, Sloan Fellows, LMP
2003-2006 MIT Data Center (Co-Founder) ● Semantics & Data http://web.mit.edu/edmund_w/www/DATACENTERpeople.htm
2004-2007 Member of IIIS, Trinity College, Dublin
2006-2009 Co-Founder, Center for Integration of Data and Systems (CIDS), Institute of Technology, Tralee, Ireland
2013-2016 IoT in industry sponsored organization (Industrial Internet Consortium, Founding Senior Vice President)

Public Service

2005-2007 Member of the Science and Technology Advisory Group (STAG), Office of the President of Taiwan, Government of Taiwan
2005-2006 Advisor to Secretary General, World Customs Organization, Brussels (http://www.wcoomd.org/)
1998-1999 Office of Public Understanding of Science & Advisory Council (Eagle Alliance) Dept of Nuclear Eng, Texas A&M University
1997-1998 Visiting Fellow, Cisco Systems, San Jose, CA (creating and promoting the global roll out of Cisco Networking Academy)
1997-1998 Chairman, National Information Technology Task Force. US Departments of Commerce; Labor; Education; White House Council of Economic Advisors and Information Technology Association of America. (Host: University of California, Berkeley, CA)
1996-1999 President and Co-Founder, Associated Scientists (Co-Founders: Glenn Seaborg, UC Berkeley & Stan Metzenberg, CSUN)

C. Contribution to Science (Basic Science Research)

1. My journey in molecular biology began in 1980 and started with sequencing SV40 mutants (by hand, using Allan Maxam and Walter Gilbert's handwritten notes on how to optimize piperidine cleavage), using Hind II/III restriction endonucleases which were "made by hand" by Ham Smith and mailed to us (University of Pittsburgh, 1981) by a post-doc in Dan Nathans lab (JHU). The large T-antigen occupied most of the 5243 base pairs of this DNA tumor virus but it had too many secrets (we did not know in 1981 and Marilyn Kozak agreed) that resisted my attempts (1981-1983) to dissect T antigen in order to map structure with function, *in vivo.*

2. In 1980, a paper was published (Phil Sharp's lab; co-author Andy Fire) demonstrating cell-free extracts for transcription *in vitro* (www.pnas.org/content/pnas/77/7/3855.full.pdf). Next, Andy Fire showed (1981) that Adenovirus promoters could initiate transcription by RNA polymerase II *in vitro* (www.ncbi.nlm.nih.gov/pmc/articles/PMC256682/pdf/jvirol00165-0089.pdf). My work, circa 1985 (Rutgers University in collaboration with S. Jane Flint and Tom Shenk at Princeton University), focused on the mechanism of action of onco-proteins by which they regulate expression of oncogenes (viral and cellular). By now it was clear that the large Adenovirus E1A protein was the principal player (onco-protein). I proceeded to isolate and purify recombinant 289R E1A and then using Andy's *in vitro* cell extract system, I was able to show that the purified Adenovirus oncoprotein 289R E1A could activate promoters and repress enhancers to regulate gene expression *in vitro*. I presented the combined results (Nikki Harter's lab) in a "talk" (yes, talk, not a poster) at the Tumor Virus Meeting in 1987 organized by ICRF at Churchill College, University of Cambridge. After a vigorous Q&A following the talk, I walked out of the hall and there was Mike Fried, who stopped me and used superlatives to convey his appreciation of the science and my presentation (Mike Fried in chapter 2 http://blueskiesbenchspace.org/index.php?pag=2). It was the first time (?) that the *in vitro* system was capable of showing repression of transcription by an onco-protein (which was the contribution I made to extend the previous work of the lab https://science.sciencemag.org/content/237/4818/1044). With S. Jane Flint at Princeton University, I was able to show that the activation and repression by 289R E1A was located to a small 49 amino acid residue (49R synthetic peptide). Is it displacing a cellular factor (https://www.jbc.org/content/263/8/3984.full.pdf) which may bind to the enhancer region? The *in vitro* dissection of mechanism of action of proteins and deconstruction of the RNA Polymerase II initiation complex (and transcriptional reconstitution) occupied the next few years of my life at Harvard, MIT and UCSF School of Medicine.

   32. Datta S, Wang DM, McGrath M, Westerdahl C, Harter ML. Bacterially produced E1A 289R activates Pol III transcription through TFIIIC. Imperial Cancer Research Fund (ICRF) Tumor Virus Meeting, 1989. Churchill College, University of Cambridge, UK.
   33. Datta, S. (1989) Transcriptional Activities of the 289 amino acid Adenovirus 2 E1A Protein in vitro (PhD thesis) Rutgers University School of Medicine, UMDNJ Graduate School of Biomedical Sciences, Rutgers University, New Jersey, USA
   34. Datta S, Chatterjee P, Losada MC, Flint SJ, Harter ML. An E. coli produced E1A 289R protein and a synthetic E1A 49R peptide variably regulates Pol II and Pol III transcription in vitro. Tumor Virus Meeting, 1988. Cold Spring Harbor Lab, NY.
   35. Datta S, Spangler R, Bruner M, Harter ML. Activation of viral and non-viral promoters by the Adenovirus 289R E1A protein in cell-free extracts. Imperial Cancer Research Fund Tumor Virus Meeting, 1987. Churchill College, University of Cambridge, UK.

3. In hypothyroidism and post-surgical treatment of thyroid carcinoma, there appeared to be a disconnect in the responsiveness to tri-iodo-thyronine (T3 therapy) in some patients. Part of the answer to this thyroid hormone resistance syndrome was elucidated by my work during 1989-1991 (with J. Larry Jameson at MGH, HMS, in the same endocrine unit as Anne Klibanski). We concluded single nucleotide polymorphisms (SNPs) may alter the DNA sequence of the thyroid response element (TRE) which also overlapped the TFIID binding site for initiation of transcription of the thyroid hormone receptor protein (THR). I was able to demonstrate this effect in *in vitro* transcription in HeLa cell extracts by adding thyroid hormone receptor protein (THR) produced in insect cells infected with recombinant baculovirus vector containing human THR. Addition of thyroid hormone (T3) regulated the effect of the binding of THR to the TRE. We also showed that this mechanism was not a special case for THR but applicable to glucocorticoid and steroid receptors in humans. The "novelty" of this *in vitro* finding was initially snubbed by the-then experts (Bob Roeder, Keith Yamamoto) but later both experts and others were able to replicate and extend our first observations. The treatment regimen for some patients at MGH was changed as a result of this observation. T3 therapy alone could no longer alleviate their symptoms because no matter how much T3 is in the system and irrespective of the binding of T3 with its receptor (THR), the T3-THR complex may not bind to the TRE and fail to control the anticipated gene expression. In another scenario, the lack of THR will make addition of T3 ineffective. Relevant publications mentioned in this bio-sketch (with respect to this discussion) are number 23 and numbers 25-31.

4. In 1991, I moved from MGH,HMS to Richard Young's lab the Whitehead Institute at MIT, where (in collaboration with Phil Sharp's group) I began purifying all the core RNA Polymerase II transcription factors (TFIIA, TFIIB, TFIIC, TFIID, TFIIE, TFIIF) from yeast using protein purification and re-purification. I was able to show transcription initiation by RNA Polymerase II in vitro by sequential addition of TF's. This work was neither recognized nor published because I had a family disaster (accidental death) and by the time I returned to the lab (several months) the lead we had was lost and my work. It was advantage Roger Kornberg.

5. Still at MIT, I joined Eric Lander (1993) who was setting up the first human genome sequencing project (inaugurated 7/27/1993). I contributed by improving human DNA packaging in YACs (yeast artificial chromosomes). The rest is history and I am a part of it.

6. December 1994, I moved to UCSF School of Medicine. I was able to create an *in vitro* system for studying gene expression in the parasite **Trypanosoma brucei** and showed that transcription of T. brucei promoters were catalyzed by RNA Polymerase III (not RNA Polymerase II as in humans and other eukaryotes). This result was not published because it was preliminary.

7. Inspired by Bruce Alberts, in January 1996, I found myself as an Assistant to the Mayor for the City and County of San Francisco and in charge of bringing science education to public schools (www.SFUSD.edu). That contribution to science is in a different vein. It was due to Glenn Seaborg. I had help from Charles Townes and Richard Zare, amongst many others, but a large part of it could not have happened (1996-98) without Carol Christ.

List of Published Work in MyBibliography:

https://www.ncbi.nlm.nih.gov/myncbi/1JQE6jfmmeekiq/bibliography/public/

D. Additional Information:

Complete CV is available from the MIT Library – PDF " CV " is here – https://dspace.mit.edu/handle/1721.1/111021

Research Support and/or Scholastic Performance

Ongoing Research Support

Research Coordinator for SmartPath: USDA-NIFA-AFRI-006304 (PI) Eric McLamore (https://emclamor.wixsite.com/mclamorelab)

NSF (National Science Foundation) Bio-sketch for Shoumen Datta

Professional Preparation

Rutgers University, NJ	School of Medicine	Ph.D., 1990
University of Pittsburgh, PA	Molecular Biology	M.S., 1985
Presidency College, India	Biochemistry	B.Sc., 1980

Recent Appointments

1999-present	Research Affiliate	MIT Auto-ID Center
2001-2010	Executive Director	MIT Forum for Supply Chain
2013-2016	Senior Vice President	Industrial Internet Consortium
2014-present	Senior Scientist	MGH, Harvard Medical School

Publications, closely related

1. Y. Rong, A.V. Padrona , K. J. Hagerty , N. Nelson, S. Chic, N. O. Keyhani, J. Katz , S.P.A. Datta, C. Gomesh , and E.S. McLamore (2018) Post Hoc Support Vector Machine Learning for Impedimetric Biosensors Based on Weak Protein–Ligand Interactions. *The Analyst*, vol. 143, no. 9, 2018, pp. 2066–2075 doi:10.1039/C8AN00065D
https://pubs.rsc.org/en/content/getauthorversionpdf/C8AN00065D

2. McLamore, E.S., S.P.A. Datta, V. Morgan, N. Cavallaro, G. Kiker, D.M. Jenkins, Y. Rong, C. Gomes, J. Claussen, D. Vanegas, E.C. Alocilja (2019) SNAPS: Sensor Analytics Point Solutions for Detection and Decision Support. *Sensors*, vol. 19, no. 22, Nov. 2019, p. 4935 https://www.mdpi.com/1424-8220/19/22/4935/pdf

3. Victoria Morgan, Lisseth Casso-Hartman, David Bahamon-Pinzon, Kelli McCourt, Robert G. Hjort, Sahar Bahramzadeh, Irene Velez-Torres, Eric McLamore, Carmen Gomes, Evangelyn C. Alocilja, Shoumen Palit Austin Datta and Diana C. Vanegas (2019) *Sensor-as-a-Service: Convergence of Sensor Analytic Point Solutions (SNAPS) and Pay-A-Penny-Per-Use (PAPPU) Paradigm as a Catalyst for Democratization of Healthcare in Underserved Communities. Diagnostics* 2020, *10 (1)*, 22
https://doi.org/10.3390/diagnostics10010022

4. Eric S. McLamore, R. Huffaker, Matthew Shupler, Katelyn Ward, Shoumen Palit Austin Datta, M. Katherine Banks, Giorgio Casaburi, Joany Babilonia, Jamie S. Foster (2019) Digital Proxy of a Bio-Reactor (DIYBOT) Combines Sensor Data and Data Analytics for Wastewater Treatment and Wastewater Management Systems *(Nature Scientific Reports, in press)*) Draft copy of "DIYBOT" available from MIT Libraries https://dspace.mit.edu/handle/1721.1/56253

5. E. S. McLamore, J. Jones, Y. G. Yingling, S.P.A. Datta, P. Lambrianides and E. Vayn (2020) *Systems Engineering Paradox in Sensor Design: Divergence between Sensor-as-a-Product vs Sensor-as-a-Service* (in press)

Publications, additional

1. Datta S, Soong CJ, Wang DM, Harter ML. 1991. Purified Adenovirus 289R E1A Protein Stimulates Pol III Transcription in vitro by altering transcription factor IIIC. J. Virology 65 5297-5304 (http://jvi.asm.org/cgi/reprint/65/10/5297)

2. Datta S, Magge S, Madison L, Jameson JL. 1992. Thyroid Hormone Receptor Mediates Transcriptional Activation and Repression of Different Promoters. Molecular Endocrinology 6 815-825 http://dspace.mit.edu/handle/1721.1/42834

3. Putlitz J, Datta S, Madison L, Jameson JL. 1991. Human Thyroid Hormone Receptor Produced in Recombinant Baculovirus-infected Insect Cells. Biochem & Biophys Research Communication 175 285-290 http://dspace.mit.edu/handle/1721.1/42901

4. Chatterjee VKK, Nagaya T, Datta S, Madison L, Rentoumis A, Jameson JL. 1991. Thyroid Hormone Resistance Syndrome: Inhibition of Normal Receptor Function by Mutant Thyroid Hormone Receptors. J. of Clinical Investigation 87 1977-1984 http://dspace.mit.edu/handle/1721.1/42900

5. Rentoumis A, Chatterjee VKK, Madison L, Datta S, Gallagher G, DeGroot LJ, Jameson JL. 1990. Negative and Positive Transcriptional Regulation by Thyroid Hormone Receptor Isoforms. Molecular Endocrinology 4 1522-1531 http://dspace.mit.edu/handle/1721.1/42902

Synergistic Activities

1. Datta, S. (2015) L'Internet des Objets : la troisième révolution industrielle. *Logistique and Management* 23 n°3 29-33 DOI: 10.1080/12507970.2015.11742760 ● http://www.tandfonline.com/doi/abs/10.1080/12507970.2015.11742760

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