CURRICULUM VITAE

DATE LAST UPDATED: October 11th, 2009

FULL NAME: Indra Neil Sarkar

CURRENT POSITIONS: Director of Biomedical Informatics,
Assistant Professor of Microbiology and Molecular Genetics,
& Assistant Professor of Computer Science

UNIVERSITY ADDRESS: Center for Clinical and Translational Science
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EDUCATION

1999 BSc (Microbiology), Michigan State University, East Lansing, MI
2002 MPhil (Biomedical Informatics), Columbia University, New York, NY
2004 PhD (Biomedical Informatics), Columbia University, New York, NY
2008 MLIS (Digital Libraries), Syracuse University, Syracuse, NY

ACADEMIC APPOINMENTS

2004-2006 *Instructor*, Downstate Medical Center,
State University of New York, New York, NY
2007-2008 *Assistant Research Scientist*, MBLWHOI Library,
Marine Biological Laboratory, Woods Hole, MA
2009-Pres *Assistant Professor*, Department of Microbiology and Molecular Genetics,
College of Medicine, University of Vermont, Burlington, VT
2009-Pres *Assistant Professor*, Department of Computer Science, College of Engineering
and Mathematical Sciences, University of Vermont, Burlington, VT

MAJOR ADMINISTRATIVE RESPONSIBILITIES

2009-Pres *Director of Biomedical Informatics*,
Center for Clinical and Translational Science, University of Vermont,
Burlington, VT

MAJOR COMMITTEE ASSIGNMENTS

2009-Pres *Member*, Informatics Advisory Group, Fletcher Allen Health Care,
Burlington, VT
2009-Pres *Member*, Regional Health Information Technology Advisory Board,
State of Vermont, Montpelier, VT

2009-Pres *Member*, Health Information Technology Higher Education Advisory Group, State of Vermont, Montpelier, VT
2009-Pres *Delegate*, Vermont Delegation to the National Governors Association for Health Information Technology and Implementation, Montpelier, VT
2009 *Member*, Health Care Payment Reform Committee (Convened by Senator Bill Carris and Representative Anne O'Brien, Co-Chairs), Montpelier, VT
2009-Pres *Member*, EHR Cause of Death Working Group, National Center for Health Statistics, Centers for Disease Control and Prevention, Hyattsville, MD

HOSPITAL OR AFFILIATED INSTITUTION APPOINTMENTS

2004-Pres *Affiliated Research Scientist*, Department of Biomedical Informatics, Columbia University, New York, NY
2004-2006 *Bioinformatics Associate*, Division of Invertebrate Zoology, American Museum of Natural History, New York, NY
2006-2008 *Informatics Manager*, MBLWHOI Library, Marine Biological Laboratory, Woods Hole, MA
2009-Pres *Adjunct Assistant Scientist*, MBLWHOI Library, Marine Biological Laboratory, Woods Hole, MA

OTHER PROFESSIONAL POSITIONS

1995 *Lab Practicum*, Intitut Fuer Klinische und Molekulare Virologie, Frederick Alexandr Universitaat Erlangen-Nurenburg, Erlangen, Bavaria, Germany
1996 *Research Intern*, Research Computing Division, Genetics Institute, Cambridge, MA
1996-1998 *Research Assistant*, Department of Microbiology, Michigan State University, East Lansing, MI
1997-1999 *Teaching Assistant & Student Instructor*, Lyman Briggs College Michigan State University, East Lansing, MI
1998-1999 *Research Assistant*, Department of Physiology, Michigan State University, East Lansing, MI
1999-2004 *Graduate Research Fellow*, Department of Biomedical Informatics, College of Physicians and Surgeons, Columbia University, New York, NY
2001 *Research Assistant*, Lister Hill Center for Biomedical Communications, National Library of Medicine, National Institutes of Health, Bethesda, MD
2006-2008 *Lecturer*, NLM/MBL Biomedical Informatics Short Course, Woods Hole, MA

PROFESSIONAL SOCIETIES

1995-Pres *Member*, American Association for the Advancement of Science
2000-Pres *Member*, American Medical Informatics Association
2000-Pres *Member*, International Society for Computational Biologists
Conferences Committee Member (2005-Pres)
2004-Pres *Member*, International Society for Infectious Diseases
2005-Pres *Member*, Computer Society, Institute of Electrical and Electronics Engineers
2005-Pres *Member*, Association for Computing Machinery
2007-Pres *Member*, Gerontological Society of America

HONORS AND AWARDS

1999 Medical Informatics Training Fellowship, National Library of Medicine, National Institutes of Health
2001 Summer Research Fellowship, Lister Hill Center for Biomedical Communications, National Library of Medicine, National Institutes of Health
2002 Who's Who in America (56th Edition), Marquis Publishing Group
2003 International Lipari School Scholarship, Italian Ministry of Research and Universities
2005 Guest Editor, Journal of Biomedical Informatics: Special Issue on Phylogenetic Inferencing
2006 Donald A.B. Lindberg Research Fellowship, Medical Library Association
2007 Who's Who of Emerging Leaders (1st Edition), Marquis Publishing Group
2007 The Honor Society of Phi Kappa Phi
2008 Award of Recognition for "outstanding contributions to the launch and success of the Encyclopedia of Life Project," Alfred P. Sloan Foundation
2008 Golden Key Society
2009 Beta Phi Mu

RESEARCH

My work is dedicated to furthering a biomedical informatics research agenda across the entire spectrum of biomedicine, from molecules to populations. Specific research involves the development and use of a range of computational techniques (including knowledge gathering and discovery methods, phylogenetics, information theory, ontology development, semantic indexing, and natural language processing) to facilitate the analysis and linking of molecular and public health data. Ultimately, my research aims to enable the creation of testable models of disease and provide a framework to enable the assessment of comparative hypotheses across the spectrum of biomedicine and health care.

GRANT AND CONTRACT SUPPORT

Current

2008-2011 PI
R01LM009725: "Enhancing Organism Based Disease Knowledge Via Name Based Taxonomic Intelligence." The goal of this project is to develop linkages between biodiversity and biomedical knowledge through semantic technologies to identify plausible hypotheses within the context of infectious diseases.
National Library of Medicine, National Institutes of Health
$1,053,540 Total Award (2.0 CM Current Effort)

2004-2010 PI (2008-Pres); Co-PI (2006-2008); Investigator (2004-2006)
IIS 0241229: "Development of New Digital Library Applications in the Context of a Basic Ontology for Biosystematics Information Using the Literature of Entomology (Ants)." As part of an international collaboration (German and the United States), the goal of this project is to digitize a museum collection and develop ontology driven methods for its organization, focusing on literature pertaining to ants.
National Science Foundation
$559,245 Total Award (1.0 CM Current Effort)

2007-2011 Consultant (2009-Pres); Project Director (2007-2008)
"Bridging Biomedical and Biodiversity Knowledge Via Taxonomic Information." The goal of this project is to develop an informational portal for consumers and experts in the molecular biology of aging that interfaces with the Encyclopedia of Life project. PI: Gary G. Borisy (MBL)
Ellison Medical Foundation
$1,954,885 Total Award (0.0 CM Current Effort; Consultant only)

Previous

2006-2007 PI
2006 DAB Lindberg Fellowship: "Bridging Biomedical and Biodiversity Knowledge via Taxonomic Information." The goal of this project was to organize taxonomic literature from biomedical and biodiversity resources into a form that can be browsed from a centralized Web interface.
Medical Library Association
$25,000 Total Award

2004-2007 Investigator
"Virtual Center for Plant Evolutionary Genomics." The goal of this project was to develop systematic approaches for organizing and curating plant genomes using high-throughput data (e.g., ESTs). Particular emphasis was placed in the advancement of phylogenetic techniques and guiding the development of automated techniques to facilitate high-throughput phylogenetic analyses.
PI: Gloria M. Coruzzi (NYU)
$4,994,582.00 Total Award

Patents

1. Lussier YA, **Sarkar IN**, Cantor MN. *System and Method for Generating an Amalgamated Database*. Provisional Patent: Columbia University Science and Technology Ventures, Health Sciences Division; US PTO 20060074991; Priority: November 2002.
2. **Sarkar IN**, Planet PJ, DeSalle R, Figurski DH. *CAOS: Method and System for Recognizing One or More Characteristic Attributes of One or More Groups of Information Items.* PCT/US02/03540; 60/267,972; Priority: February 2001.

TEACHING

Full Courses

1994	*Chemistry* [Accelerated High School Course] Educ. Stud. Prog., Massachusetts Institute of Technology, Cambridge, MA
1994	*Calculus I (AB)* [Accelerated High School Course] Educ. Stud. Prog., Massachusetts Institute of Technology, Cambridge, MA
2004-2006	*Introduction to Medical Informatics* [400 Graduate Level] Downstate Medical Center, State University of New York, New York, NY
2004-2006	*Clinical Decision Support Systems* [400 Graduate Level] Downstate Medical Center, State University of New York, New York, NY
2004-2006	*Internet Integration into Health Care* [400 Graduate Level] Downstate Medical Center, State University of New York, New York, NY
2009	*Introduction to Biomedical Informatics (CTS 395)* Center for Clinical and Translational Science, University of Vermont, Burlington, VT
2010 (planned)	*Pragmatic Bioinformatics for Bench Biologists (MMG 231)* Department of Microbiology and Molecular Genetics, University of Vermont, Burlington, VT

Individual Lectures / Course Units

1997-1999	*Biocomputing* [Undergraduate Lab Course] Lyman Briggs College, Michigan State University, East Lansing, MI
2005	*Organizing and Understanding the Biological Data Deluge through Phylogenetics* [Conference Tutorial] IEEE Computational Systems Bioinformatics Conference. Stanford, CA.
2006-2008	*Bioinformatics* [CME Level Survey Course] NLM/MBL Biomedical Informatics Short Course, Woods Hole, MA
2007	*Biodiversity Informatics: Managing Knowledge Beyond Humans and Model Organisms* [Conference Tutorial] Pacific Symposium on Biocomputing. Maui, HI.
2009	*Introduction to Biodiversity Informatics* [Graduate Level Course] Annelid Tree of Life – Clitellata Lecture Series, Gothenburg, Sweden
2009	*Finding Needles in the Biodiversity Haystack: Secondary Uses of Biological Information* [Graduate Level Course] Annelid Tree of Life – Clitellata Lecture Series, Gothenburg, Sweden

MENTORING

Thesis Committees

2009-Pres	Committee Chair– Violet Roskens (MSc, Biology, University of Vermont)

High School students

2004-2006	Atin Saha (Bioinformatics Research Project, AMNH)
2005-2006	Judy Ri (Bioinformatics Research Project, AMNH)
2005-2006	Subashis Paul (Bioinformatics Research Project, AMNH)

2005-2006 Lakshman Sankar (Bioinformatics Research Project, AMNH)
2005-2006 Tanu Chauhan (Bioinformatics Research Project, AMNH)

SERVICE / ADMINISTRATION

Editorships

2005-2007 Guest Editor, *Journal of Biomedical Informatics* (Special Issue: Phylogenetics)
2007-Pres Editorial Board Member, *Recent Patents in Computer Science*
2009-Pres Editorial Board Member, *Journal of Biomedical Informatics*
2009-Pres Editorial Board Member, *International Knowledge Discovery in Bioinformatics*
2009-Pres Editorial Board Member, *Briefings in Bioinformatics*
2009-Pres Guest Editor, *BMC Bioinformatics* (Special Issue: Biodiversity Informatics)

Journal / Book / Conference Reviews

2004 Pacific Symposium on Biocomputing
2005-Pres Bioinformatics
2006-Pres Journal of Biomedical Informatics
2006-Pres BMC Bioinformatics
2006 World Scientific Press
2007 Association for Computational Linguists: BioNLP
2007 International Symposium on Languages in Biology & Medicine
2007-Pres American Medical Informatics Association Annual Symposium
2007-Pres BMC Source Code for Biology and Medicine
2008 IMIA Yearbook of Medical Informatics
2009 Artificial Intelligence in Medicine

Conference Organizing

2006 Symposium Session Chair. AAAS Annual Symposium. St. Lous, MO.
2007 Track Chair, Pacific Symposium on Biocomputing. Big Island, Hawaii.
2007-2008 Founding Track Chair, AMIA Summit on Translational Bioinformatics. San Francisco, CA.
2008 Workshop Organizer. Data Analysis Working Group 2008 Hack-a-thon. EOL BioSynC, Field Museum of Natural History. Chicago, IL.
2008-2009 Vice Chair & Track Chair, AMIA Summit on Translational Bioinformatics. San Francisco, CA.
2008-Pres Member, Technical Implementation Board, Third International Conference for the Barcode of Life. Mexico City, Mexico.
2009-Pres Track Chair, AMIA Summit on Translational Bioinformatics. San Francisco, CA.

External Advisory Panels / Boards

1991-Pres Member, Board of Directors, Mosaic Data Systems, Inc., Bedford, MA
1996-1999 President & Co-Founder, Board of Directors, InterDream Corporation, Bedford, MA
1999-2008 Vice-President (2004-2008); Assistant Treasurer (2003-2004); Director (1999-2008), Lyman Briggs Alumni Association,

Michigan State University, East Lansing, MI
2002-2005 Member, Advisory Committee, Wiley Interscience, Hoboken, NJ
2006-2007 Member, Data Curation Education Program, University of Illinois Urbana-Champaign
2007-Pres Chair, Data Analysis Working Group, Barcode of Life Initiative, Consortium for the Barcode of Life, Washington, DC
2007-Pres Member, Implementation Board, Barcode of Life Initiative, Consortium for the Barcode of Life, Washington, DC
2009-Pres Member, Electronic Health Record - System, Vital Records Functional Work Group, HL7 EHR Technical Committee, National Center for Health Statistics, Centers for Disease Control and Prevention, Hyattsville, MD

Grant Review

2007 Information and Intelligent Systems/Information Integration and Informatics, National Science Foundation
2008 Information and Intelligent Systems/Cyber Enabled Discovery and Innovation, National Science Foundation
2009 Emerging Technologies and Training in Neurosciences, Challenge Grants Internet Assisted Review, National Institutes of Health
2009 Bioengineering Sciences and Technologies, Challenge Grants Internet Assisted Review, National Institutes of Health

Previous Committees

1999-2003 Ex-Officio (2003); Chair (2002); Vice-Chair (2001); Member (1999-2002), Graduate Student Advisory Group, Columbia University
2000-2002 Student Representative, Department of Biomedical Informatics, College of Physicians and Surgeons, Columbia University, New York, NY
2002-2003 Member, Advisory Committee, Columbia Speakers Fund, Columbia University, New York, NY

PUBLICATIONS

Theses

1. **Sarkar IN**. Automated Techniques for the Identification and Classification of Evolutionarily Significant Genomic Features. [Doctoral Dissertation] Graduate School of Arts and Sciences at the College of Physicians and Surgeons, Columbia University, 2004.
2. **Sarkar IN**. Biocomputing: Addressing the Black–Box Syndrome. [Bachelor's Capstone Essay] Lyman Briggs College, Michigan State University, 1999.

Software Applications

1. **Sarkar IN**, Schenk R. LigerCat. (2007)
2. Koning D, **Sarkar IN**, Moritz TD. *TaxonGrab*. (2005)
3. **Sarkar IN**. *ORFcurator*. (2004)
4. Cantor M, **Sarkar IN**, Lussier YA. *GenesTrace*. (2003)
5. **Sarkar IN**, Planet PJ, DeSalle R, Figurski DH. *Phylogenomenclature*. (2002)

6. **Sarkar IN**, Planet PJ, DeSalle R, Figurski DH. *CAOS*. (2002)

Peer-Reviewed Journal

1. Chen ES, **Sarkar IN**. "MeSHing Molecular Sequence and Clinical Trials: A Feasibility Study." *Journal of Biomedical Informatics*. (in press)
2. Miller H, Norton CN, **Sarkar IN**. "GenBank and PubMed: How connected are they?" BMC Res Notes. 2009 Jun 9;2(1):101.
3. **Sarkar IN**, Planet PJ, DeSalle R. "CAOS Software for Use in Character Based DNA Barcoding." *Molecular Ecology Resources*. 2008;8(6):1256-1259.
4. **Sarkar IN**, Schenk R, Norton CN. "Exploring Historical Trends Using Taxonomic Name Metadata." *BMC Evolutionary Biology*. 2008 8:144.
5. Garcia–España A, Chung PJ, **Sarkar IN**, Stiner E, Sun TT, Desalle R. "Appearance of new tetraspanin genes during vertebrate evolution." *Genomics*. 2008 91(4):326–34.
6. **Sarkar IN**, Egan MG, Coruzzi GM, Lee EK, DeSalle R. "Automated Simultaneous Analysis Phylogenetics (ASAP): An Enabling Tool for Phylogenomics." *BMC Bioinformatics*. 2008 19;9:103.
7. Rach J, DeSalle R, **Sarkar IN**, Schierwater B, Hadrys H. "Character–based DNA barcoding allows discrimination of genera, species, and populations in Odonata." *Proceedings of the Royal Society B: Biology*. 2008 275(1632):237–47.
8. **Sarkar IN**. "Biodiversity Informatics: Organizing and Linking Information Across the Spectrum of Life." *Briefings in Bioinformatics*. 2007 8(5):347–57.
9. Leary PR, Remsen DP, Norton CN, Patterson DJ, **Sarkar IN**. "uBioRSS: Tracking Taxonomic Literature Using RSS." *Bioinformatics*. 2007 23(11):1434–1436.
10. Perkins SL, **Sarkar IN**, Carter R. "The Phylogeny of Rodent Malaria Parasites: Simultaneous Analysis Across Three Genomes." *Infection, Genetics and Evolution*. 2007 7(1):74-83.
11. Kelly RP, **Sarkar IN**, Eernisse DJ, DeSalle R. "DNA Barcoding Using Chitons (genus *Mopalia*). *Molecular Ecology Notes*. 2007 7(2): 177–183.
12. Chiu JC, Lee EK, Egan MG, **Sarkar IN**, Coruzzi GM, DeSalle R. "OrthologID: Automation of Genome Scale Ortholog Identification within a Parsimony Framework." *Bioinformatics* 2006 22(6):699–707.
13. **Sarkar IN**. "Phylogenetics in the Modern Era." *Journal of Biomedical Informatics* Jan/Feb;39(1):3–5. 2006.
14. Planet PJ, **Sarkar IN**. "mILD: A Tool for Constructing and Analyzing Matrices of Pairwise Character Incongruence Tests." *Bioinformatics* 21:4423–4224. 2005.
15. Koning D, **Sarkar IN**, Moritz TD. "TaxonGrab: Extracting Taxon Names from Text." *Journal of Biodiversity Informatics* 2;79–82. 2005.
16. **Sarkar IN**, Rosenfeld JA, Planet PJ, Figurski DH, DeSalle R. "ORFcurator: Molecular Curation of Genes and Gene Clusters in Prokaryotic Organisms." *Bioinformatics* 20: 3462–3465. 2004.
17. **Sarkar IN**, Cantor MN, Hartel F, Bodenreider O, Lussier YA. "An Evaluation of Hybrid Methods for Matching Biomedical Terminologies: Mapping the Gene Ontology to the UMLS." *Stud Health Technol Inform* 95:62–7. 2003.
18. **Sarkar IN**, Planet PJ, Bael TE, Stanley SE, Siddall M, DeSalle R, Figurski DH. "Characteristic Attributes in Cancer Microarrays." *Journal of Biomedical Informatics* Apr/May;35(2):111–122. 2002.

19. **Sarkar IN**, Thornton J, Planet PJ, Schierwater B, and DeSalle R. "A systematic method for classification of novel homeoboxes." *Molecular Phylogenetics and Evolution* Sep;24(3):388–399. 2002.
20. **Sarkar IN** and Starren JB. "Desiderata for Personal Electronic Messaging in Clinical Systems." *Journal of the American Medical Informatics Association* May/Jun;9:209–216. 2002.
21. Planet PJ, DeSalle R, Sidall ME, Bael T, **Sarkar IN**, Stanley SE. "Systematic Analysis of DNA Microarray Data: Ordering and Interpreting Patterns of Gene Expression." *Genome Research* Jul;11(7):1149–1155. 2001.

Peer-Reviewed Conference

1. **Sarkar IN**, Schenk R, Miller H, Norton CN. "LigerCat: Using 'Mesh Clouds' from Journal, Article, or Gene Citations to Facilitate the Identification of Relevant Biomedical Literature." AMIA Annual Meeting, San Francisco. (2009; in press).
2. Melton GB, Raman N, Chen ES, **Sarkar IN**, Pakhomov S, Madoff RD. "Evaluation of Family History Information within Clinical Documents and Adequacy of HL7 Clinical Statement and Clinical Genomics Family History Models for Its Representation." AMIA Annual Meeting, San Francisco. (2009; in press).
3. **Sarkar IN**. "Biodiversity Informatics: Managing Knowledge Beyond Humans and Model Organisms." Pacific Symposium on Biocomputing, Maui, HI: 12: 340–342. 2007.
4. **Sarkar IN**, Agrawal A. "Literature Based Discovery of Gene Clusters Using Phylogenetic Methods." AMIA Annual Meeting, Washington, DC: 689–693. 2006.
5. **Sarkar IN**, Cantor MN, Bodenreider O, Lussier YA. "GenesTrace: Phenomic Knowledge Discovery Via Structured Terminology." Pacific Symposium on Biocomputing, Big Island, HI: 10:103–114. 2005.
6. **Sarkar IN**, Cantor MN, Gelman R, Hartel F, Lussier YA. "Linking Biomedical Language Information and Knowledge Resources: GO and UMLS." Pacific Symposium Biocomputing, Kua'i, HI: 8:427–450. 2003.
7. Lussier YA, **Sarkar IN**, Cantor MN. "An Integrative Model for In–Silico Clinical Genomics Discovery Science." AMIA Annual Meeting, Washington, DC: 469–473. 2002.
8. **Sarkar IN** and Rindflesch TC. "Discovering Protein Similarity Using Natural Language Processing." AMIA Annual Meeting, Washington, DC: 677–681. 2002.

Conference Abstracts

1. **Sarkar IN**. "Deriving and Using Barcode Based Diagnostics for Information Retrieval." *Second International Barcode of Life Conference*, Taipei, Taiwan. 2007.
2. **Sarkar IN**. "Public Health Through the Lens of Biodiversity." *AMIA Spring Congress*, Orlando, FL. 2007.
3. **Sarkar IN**, Leary PR, Norton CN. "A Customizable 'Mash–up' for Model and Disease Organisms." *Medical Library Association Annual Meeting*, Philadelphia, PA. 2007.
4. Umejei C, **Sarkar IN**. "zMedline: A Medline–Based Content Management System." *AMIA Annual Meeting*, Washington, DC: 469–473. 2006.
5. **Sarkar IN**, Remsen DP. "Enabling Biological Knowledge Integration Through Scientific Nomenclature." *International Society for Phylogenetic Nomenclature Conference*, Yale University, New Haven, CT. 2006.

6. **Sarkar IN**, DeSalle R. "Automated Barcoding Using the Characteristic Attribute Organization System." *CBoL DAWG*, National Museum of Natural History, Paris, France. 2006.
7. Rach J, DeSalle R, **Sarkar IN**, Schierwater B, Hadrys H. "Character Based DNA–Barcoding for Identifying Conservation Units in Odonata." *CBoL DAWG*, National Museum of Natural History, Paris, France. 2006.
8. Catapano T, Agosti D, Sautter G, Koning D, Boehm K, Johnson NF, Heidorn PB, Moritz TD, **Sarkar IN**, Stephenson C. "TaxonX: A Lightweight and Flexible XML Schema for Markup of Taxonomic Treatments." TDWG, St Louis, MO. 2006.
9. **Sarkar IN**, Planet PJ, DeSalle R. "TEPC: Total Evidence Phylogenetic Correlation of Microbial Phenotypes and Genotypes." *ISMB 2005: 13th Annual International Conference on Intelligent Systems for Molecular Biology*, Detroit, MI. 2005.
10. **Sarkar IN**, Cantor MN, Bodenreider O, Lussier YA. "GenesTrace: Biological Knowledge Discovery via Structured Terminology." *MedInfo 2004: 11th World Congress on Medical Informatics*, San Francisco, CA. 2004.
11. Cantor MN, **Sarkar IN**, Gelman R, Lussier YA. "Hybrid Lexical Methods for Mapping the Gene Ontology to the UMLS." *Pacific Symposium on Biocomputing*, Kaua'i, HI. 2003.
12. **Sarkar IN**, Cantor MN, DeSalle R, Lussier YA. "Exploring SNOMED Using Phylogenetic Analysis Tools." *AMIA Annual Meeting*, Washington, DC. 2002.
13. **Sarkar IN**, Planet PJ, DeSalle R, Figurski DH. "Knowledge Acquisition of Organized Sets (KAOS) of Clinical Data." *AMIA Annual Meeting*, Washington, DC. 2001.
14. **Sarkar IN**, Planet PJ, DeSalle R, Figurski DH. "Knowledge Aggregation and Separation Through a Novel Classification Algorithm." *AAAS Annual Meeting and Innovation Exposition*, San Francisco, California. 2001.
15. **Sarkar IN**, Malesewski JJ, Luckie DB. "Biocomputing in the Undergraduate Classroom." *AAAS Annual Meeting and Innovation Exposition*, San Francisco, California. 2001.
16. **Sarkar IN**, Luckie DB. "Biocomputing: Learning How to Write Programs to Solve Problems." *Michigan State University Undergraduate Research Forum*, East Lansing, Michigan. 1998.
17. **Sarkar IN**, Koslowsky DJ. "Mitochondrial Cleavage mRNA Cleavage/Polyadenylation Regulation in Pathogenic African Trypanosomes." *Michigan State University 1997 Undergraduate Research Forum*, East Lansing, Michigan. 1997.

Book Chapter

1. Egan MG, Lee EK, Chiu JC, **Sarkar IN**, Coruzzi GM, DeSalle R. "Gene Orthology Assessment With OrthologID." in *Bioinformatics for DNA Sequence Analysis*. Humana Press, Editor: David Posada. 2009.

Invited Presentations

1. Third International Barcode of Life Conference. Plenary Address. "Informatics and Data Analytics for DNA Barcoding: Wherefrom, Where now, and Whereto?" Mexico City, MX. 10-12 November 2009 (invited).
2. Systems Biology of Aging. "Enabling a Systems View of the Biology of Aging through Semantic Technologies." Phoenix, AZ. 6 December 2008.
3. Gerontological Society of America Annual Meeting. "Development of an Automated

Framework to Identify Biology of Aging Literature." National Harbor, MD. 22 November 2008.

4. European Molecular Biology Network. Keynote address. "Biodiversity Informatics: Enabling a Macroscopic View of Biology." 18–20 September 2008.
5. Cambridge Semantic Web Group. "Harnessing the Power of the Semantic Web to Manage Biodiversity Data." 10 June 2008.
6. Harvard Medical School. "Biodiversity Informatics: Information Integration Across the Spectrum of Life." 25 February 2008.
7. Plant and Animal Genome XVI Conference. "Towards Developing Practical Taxonomic Ontologies." 14 January 2008.
8. 5th Genome Standards Consortium (GSC) Workshop. "Gaz – an open source community–developed Gazetter." Cambridge, UK. 12–14 December 2008.
9. Coalition for Networked Information, Fall 2007 Task Force Meeting. "Briefing: The Biodiversity Heritage Library." Washington, DC. 10–11 December 2007.
10. Lyman Briggs College 40th Anniversary Celebration. "Biodiversity Informatics and Assembly of the Encyclopedia of Life." East Lansing, MI. 4 October 2007.
11. National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA). "A Fish By Any Other Name: Organizing and Navigating Taxonomic Content From Literature." Woods Hole, MA. 4 April 2007.
12. MITRE Corporation. "Biomedical Insights Through the Lens of Biodiversity." Bedford, MA. 14 March 2007.
13. Marine Biological Laboratory Bay Paul Center. "Informatics Meets Biodiversity: Introductions." Woods Hole, MA. 9 March 2007.
14. Pacific Symposium on Biocomputing (PSB 07). "Invited Panelist: New Frontiers in Natural Language Processing." Maui, HI. 5 January 2007.
15. Columbia University Department of Biomedical Informatics, Department Retreat. Alumni Speaker. Hudson Valley, NY. 28–30 August 2006.
16. National Museum of Natural History, Paris, France. "Automated Barcoding Using the Characteristic Attribute Organization System." 7 July 2006.
17. Yale University, New Haven, CT: International Society for Phylogenetic Nomenclature (PhyloCode). "Enabling Biological Knowledge Integration Through Scientific Nomenclature." 29 June 2006.
18. University of Illinois Urbana–Champaign, Urbana–Champaign, IL. "Bridging Biomedical and Biodiversity Knowledge Through Literature." TeleNature Workshop on Refactoring Natural History Literature. 17–18 April 2006.
19. ACM Joint Conference on Digital Libraries (JCDL 2005); Networked Knowledge Organization Systems/Services (NKOS) Workshop. "Invited Panelist: Using the Existing Biomedical Infrastructure to Guide the Design and Development of Biological Ontologies." Denver, CO. 10 June 2005.
20. Quantitative Biology (QuBi) Symposium at Hunter College, City University of New York. "Contemporary Topics in Bioinformatics: Organizing and Curating the Genome Deluge." New York, NY. 6 May 2005.
21. Pacific Symposium on Biocomputing (PSB 05). "Invited Panelist: Enabling Resources for Biomedical Discovery." Big Island, HI. 6 January 2005.
22. National Library of Medicine. Training Directors' Meeting. "The Characteristic Attribute Organization System." Washington, DC. 9 July 2003.

23. Michigan State University – Lyman Briggs School. 2002 Fall Commencement. Alumni Speaker. East Lansing, MI. 7 December 2002.
24. Michigan State University – Lyman Briggs School. 35th Anniversary Alumni Guest Speaker. "Physiognomonics." East Lansing, MI. 26 September 2002.