Stanford



Mark Musen

Stanford Medicine Professor of Computational Medicine, Professor of Medicine (Computational Medicine) and of Biomedical Data Science

CONTACT INFORMATION

- **Administrative Contact**

  Cynthia Zhou

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Bio

BIO

Dr. Musen is the Stanford Medicine Professor of Computational Medicine. He is Professor of Medicine and of Biomedical Data Science, and he is Chief of the Division of Computational Medicine. Dr. Musen conducts research related to open science, data stewardship, intelligent systems, and biomedical decision support. His group developed Protégé, the world's most widely used technology for building and managing terminologies and ontologies. He served as the principal investigator of the National Center for Biomedical Ontology, one of the original National Centers for Biomedical Computing created by the U.S. National Institutes of Heath (NIH). He served as principal investigator of the Center for Expanded Data Annotation and Retrieval (CEDAR). CEDAR develops new technology to ease the authoring and management of biomedical experimental data and metadata to make online datasets more findable, accessible, interoperable, and reusable. Dr. Musen chaired the Health Informatics and Modeling Topic Advisory Group for the World Health Organization's revision of the International Classification of Diseases (ICD-11) and he currently directs the WHO Collaborating Center for Classification, Terminology, and Standards at Stanford University.

Early in his career, Dr. Musen received the Young Investigator Award for Research in Medical Knowledge Systems from the American Association of Medical Systems and Informatics and a Young Investigator Award from the National Science Foundation. In 2006, he was recipient of the Donald A. B. Lindberg Award for Innovation in Informatics from the American Medical Informatics Association. He has been elected to the American College of Medical Informatics, the Association of American Physicians, the International Academy of Health Sciences Informatics, and the National Academy of Medicine. He is founding co-editor-in-chief of the journal Applied Ontology and the recipient of two honorary doctoral degrees.

ACADEMIC APPOINTMENTS

- Professor, Computational Medicine
- Professor, Department of Biomedical Data Science
- Member, Bio-X
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

ADMINISTRATIVE APPOINTMENTS

- Principal Investigator, RADx Data Hub, (2021-2026)
- Principal Investigator, Center for Expanded Data Annotation and Retrieval, (2014- present)

- Principal Investigator, National Center for Biomedical Ontology, (2005- present)
- Co-Editor-in-Chief, Applied Ontology: An International Journal of Ontological Analysis and Conceptual Modeling, (2005-2016)
- Deputy Director for Bioinformatics, Immune Tolerance Network, (2005-2007)
- Chief, Division of Computational Medicine, (1992- present)

HONORS AND AWARDS

- Distinguished Fellow, American College of Medical Informatics (2025)
- Lifetime Achievement Award, Knowledge Graph Conference (2025)
- Doctor honoris causa, University of Fribourg, Switzerland (2023)
- Doctor honoris causa, University of A Coruña, Spain (2021)
- Elected member, International Academy of Health Sciences Informatics (2017)
- Elected member, National Academy of Medicine (2016)
- "Ten Year Award" for the most influential paper presented at ISWC, ten years previously, Semantic Web Science Association (2014)
- General Chair, Association for Computing Machinery Conference on Knowledge Capture (K-Cap '11) (2011)
- Elected member, Association of American Physicians (2010)
- Donald A. B. Lindberg Award for Innovation in Informatics, American Medical Informatics Association (2006)
- General Chair, International Semantic Web Conference (2005)
- Chair, Scientific Program Committee, American Medical Informatics Association Annual Symposium (2003)
- Elected member, American Society for Clinical Investigation (1997)
- NSF Young Investigator Award, National Science Foundation (1992)
- Elected Fellow, American College of Medical Informatics (1989)
- Young Investigator Award for Research in Medical Knowledge Systems, American Association for Medical Systems and Informatics (1989)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Executive Committee, Committee on Data of the International Science Council (CODATA) (2025 - present)
- Member, U.S. National Committee for CODATA (2020 - present)
- Member, National Advisory Council on Biomedical Imaging and Bioengineering (2011 - 2015)
- Chair, Health Informatics and Modeling Topic Advisory Group, ICD Revision Steering Group, World Health Organization (2008 - 2016)

PROGRAM AFFILIATIONS

- Symbolic Systems Program

PROFESSIONAL EDUCATION

- Postdoctoral fellow, Erasmus University, Rotterdam , Medical Informatics (1988)
- Ph.D., Stanford University , Medical Information Sciences (1988)
- Residency, Stanford University Hospital , Internal Medicine (1983)
- M.D., Brown University , Medicine (1980)
- Sc.B., Brown University , Biology (1977)

LINKS

- GEMSTONE Programmable Cloud Laboratory: https://gemstoneproject.org
- The Center for Expanded Data Annotation and Retrieval (CEDAR): https://metadatacenter.org

- The National Center for Biomedical Ontology: https://bioontology.org
- Protégé resource for ontology engineering: https://protege.stanford.edu

Research & Scholarship

RESEARCH INTERESTS

- Artificial intelligence (AI)
- Data Science

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Semantic technology, which makes explicit the knowledge that drives computational systems, offers great opportunities to advance biomedical science and clinical medicine. Our laboratory studies the use of semantic technology in a range of application systems, emphasizing approaches that enhance the stewardship and dissemination of experimental datasets for open science.

The Center for Expanded Data Annotation and Retrieval (CEDAR) investigates new computational approaches that use semantic technology to ease the creation of metadata to describe scientific experiments. Metadata are data about data—machine-actionable descriptions of experimental data, of the methods used to acquire the data, of the analyses that have been performed on the data, and of the provenance of all this information. Science suffers because much of the metadata that investigators create to annotate the datasets that they archive in public repositories are incomplete and nonstandardized. CEDAR studies new methods to assist the authoring of high-quality metadata. Our long-term goal is to aid the dissemination of scientific data and knowledge in machine-processable form, and to create intelligent agents that can help scientists to track experimental results online, to integrate datasets, and to use public data repositories to make new discoveries.

We see CEDAR as the first step in the development of a new kind of technology to change the way in which scientific knowledge is communicated—not as prose journal articles but as computer-interpretable data and metadata. Automated systems one day will access such online "publications" to augment the capabilities of human scientists as they seek information about relevant studies and as they attempt to relate their own results to those of other investigators.

Our laboratory has pioneered methods for the development of intelligent systems. An important element of this work has involved the use of ontologies—formal descriptions of application areas that are created in a form that can be processed by both people and computers. CEDAR uses ontologies to ensure that scientific metadata are represented in a standardized way. Our Protégé system for ontology development—now with more than 400,000 registered users—allows us to continue to explore new methods for ontology engineering and for the construction of intelligent systems and knowledge graphs.

Teaching

COURSES

2026-27

- Modeling Biomedical Systems: CIM 212 (Win)

2025-26

- Modeling Biomedical Systems: CIM 212 (Win)

2024-25

- Mathematical Models and Medical Decisions: BIOMEDIN 219 (Win)

- Modeling Biomedical Systems: BIOMEDIN 210 (Win)
- Modeling Biomedical Systems: CIM 212 (Spr)
- Modeling Biomedical Systems: CS 270 (Win)

2023-24

- Digital Health Practicum in a Health Care Delivery System: BIOMEDIN 226 (Spr)
- Mathematical Models and Medical Decisions: BIOMEDIN 219 (Win)
- Modeling Biomedical Systems: BIOMEDIN 210, CS 270 (Win, Spr)

STANFORD ADVISEES

Scholarly Concentration Director

Hannah Kang

Postdoctoral Faculty Sponsor

Brian Donovan, Shijie Wan

Master's Program Advisor

Kunming Li

Doctoral (Program)

Kae Nurge

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biomedical Data Science (Masters Program)
- Biomedical Data Science (PhD Program)
- Health Services Research (Masters Program)
- Medicine (Masters Program)

Publications

PUBLICATIONS

- **Knowledge Engineering for Open Science: Building and Deploying Knowledge Bases for Metadata Standards.** *AI magazine*
  Musen, M. A., O'Connor, M. J., Hardi, J., Martínez-Romero, M.
  2026; 47 (1)
- **Automated standardization of legacy biomedical metadata using an ontology-constrained LLM agent.** *Journal of biomedical informatics*
  Hardi, J., O'Connor, M. J., Martínez-Romero, M., Rosario, J. G., Fisher, S. A., Musen, M. A.
  2026: 105116
- **Toward total recall: Enhancing data FAIRness through AI-driven metadata standardization.** *GigaScience*
  Sundaram, S. S., Gonçalves, R. S., Musen, M. A.
  2026
- **Modeling community standards for metadata as templates makes data FAIR.** *Scientific data*
  Musen, M. A., O'Connor, M. J., Schultes, E., Martinez-Romero, M., Hardi, J., Graybeal, J.
  2022; 9 (1): 696
- **Demand standards to sort FAIR data from foul** *NATURE*
  Musen, M. A.
  2022; 609 (7926): 222

- **The variable quality of metadata about biological samples used in biomedical experiments.** *Scientific data*
  Goncalves, R. S., Musen, M. A.
  2019; 6: 190021

- **HuBMAP Data Portal: a resource for multimodal spatial and single-cell data of healthy human tissues.** *Nature communications*
  Turner, M. L., Smits, T. C., Liaw, T. S., Honick, B., Shirey, B., Choy, L., Akhmetov, N., An, S., Betancur, D., Bordelon, D., Burke, K., Cao-Berg, I., Conroy, et al
  2026; 17 (1)

- **ACCELERATE-BASSO: early experiences and emerging best practices for ontology development in behavioral and social science research.** *Journal of biomedical semantics*
  Yu, Y., Kang, L., Michie, S., Duncan, W. D., Beverley, J., Li, F., McNeil, D. W., Huo, N., Li, H., Horridge, M., Musen, M. A., Bian, J., Tao, et al
  2026

- **Harnessing Multiteam Systems in the Development of a Multifaceted Data Repository for Emergency Public Health Response.** *Journal of public health management and practice : JPHMP*
  Farlow, B. L., Smith, K. N., Weyhmiller, A., Hubal, R., Keller, M. A., Musen, M. A., Suber, S., Krishnamurthy, A.
  2026

- **HuBMAP Data Portal: A Resource for Multimodal Spatial and Single-Cell Data of Healthy Human Tissues.** *ArXiv*
  Turner, M. L., Smits, T. C., Liaw, T. S., Honick, B., Shirey, B., Choy, L., Akhmetov, N., An, S., Betancur, D., Bordelon, D., Burke, K., Cao-Berg, I., Conroy, et al
  2026

- **HuBMAP Data Portal: A Resource for Multimodal Spatial and Single-Cell Data of Healthy Human Tissues.** *ArXiv*
  Turner, M. L., Smits, T. C., Liaw, T. S., Honick, B., Shirey, B., Choy, L., Akhmetov, N., An, S., Betancur, D., Bordelon, D., Burke, K., Cao-Berg, I., Conroy, et al
  2026

- **The HuBMAP Framework for Advancing Data FAIRness.** *bioRxiv : the preprint server for biology*
  Fisher, S. A., Hardi, J., Morgan, R., Nordgren, E., Kant, P. M., Honick, B., Rosario, J., O'Connor, M. J., Blood, P. D., Silverstein, J. C., Musen, M. A.
  2026

- **VO: The Vaccine Ontology.** *Scientific data*
  Zheng, J., Lin, A. Y., Huffman, A., Masci, A. M., Racz, R., Wu, G., Roan, K., Ong, E., Sarntivijai, S., Hu, J., Asfaw, E., Kahn, H., Li, et al
  2026

- **VO: The Vaccine Ontology** *SCIENTIFIC DATA*
  Zheng, J., Lin, A., Huffman, A., Masci, A., Racz, R., Wu, G., Roan, K., Ong, E., Sarntivijai, S., Hu, J., Asfaw, E., Kahn, H., Li, et al
  2026; 13 (1)

- **Desiderata for a biomedical knowledge network: opportunities, challenges and future directions.** *Bioinformatics advances*
  Wu, C., Liu, H., Flannick, J., Musen, M. A., Su, A. I., Hunter, L. E., Powers, T. M., Wu, C. H.
  2026; 6 (1): vbag036

- **A general strategy for generating expert-guided, simplified views of ontologies.** *Scientific data*
  Caron, A. R., Puig-Barbe, A., Quardokus, E. M., Balhoff, J. P., Belfiore, J., Chipampe, N., Hardi, J., Herr, B. W., Kir, H., Roncaglia, P., Musen, M. A., Parkinson, H., McLaughlin, et al
  2026

- **Desiderata for a biomedical knowledge network: opportunities, challenges and future Directions.** *ArXiv*
  Wu, C., Liu, H., Flannick, J., Musen, M. A., Su, A. I., Hunter, L., Powers, T. M., Wu, C. H.
  2025

- **Key takeaways from Stanford's symposium on AI for Data Science.** *Journal of clinical and translational science*
  Desai, M., Auerbach, J., Baker, L., Benjamin-Chung, J., Bondy, M., Boulos, M., Bunning, B. J., Deng, N., Goodman, S. N., Horn, I., Linos, E., Musen, M. A., Sanders, et al
  2025; 9 (1): e237

- **Key takeaways from Stanford's symposium on AI for Data Science** *JOURNAL OF CLINICAL AND TRANSLATIONAL SCIENCE*

Desai, M., Auerbach, J., Baker, L., Benjamin-Chung, J., Bondy, M., Boulos, M., Bunning, B. J., Deng, N., Goodman, S. N., Horn, I., Linos, E., Musen, M. A., Sanders, et al
2025; 9 (1)

- **A Cloud-Based Platform for Harmonized COVID-19 Data: Design and Implementation of the Rapid Acceleration of Diagnostics (RADx) Data Hub.** *JMIR public health and surveillance*
  Martínez-Romero, M., Horridge, M., Mistry, N., Weyhmiller, A., Yu, J. K., Fujimoto, A., Henry, A., O'Connor, M. J., Sier, A., Suber, S., Akdogan, M. U., Cao, Y., Valliappan, et al
  2025; 11: e72677
- **VO: The Vaccine Ontology.** *bioRxiv : the preprint server for biology*
  Zheng, J., Lin, A. Y., Huffman, A., Masci, A. M., Racz, R., Wu, G., Roan, K., Ong, E., Sarntivijai, S., Hu, J., Asfaw, E., Kahn, H., Li, et al
  2025
- **Construction, Deployment, and Usage of the Human Reference Atlas Knowledge Graph.** *Scientific data*
  Bueckle, A., Herr, B. W., Hardi, J., Quardokus, E. M., Musen, M. A., Borner, K.
  2025; 12 (1): 1100
- **BioPortal: an open community resource for sharing, searching, and utilizing biomedical ontologies.** *Nucleic acids research*
  Vendetti, J., Harris, N. L., Dorf, M. V., Skrenchuk, A., Caufield, J. H., Gonçalves, R. S., Graybeal, J. B., Hegde, H., Redmond, T., Mungall, C. J., Musen, M. A.
  2025
- **Human BioMolecular Atlas Program (HuBMAP): 3D Human Reference Atlas construction and usage.** *Nature methods*
  Borner, K., Blood, P. D., Silverstein, J. C., Ruffalo, M., Satija, R., Teichmann, S. A., Pryhuber, G. J., Misra, R. S., Purkerson, J. M., Fan, J., Hickey, J. W., Molla, G., Xu, et al
  2025
- **Ensuring Adherence to Standards in Experiment-Related Metadata Entered Via Spreadsheets.** *Scientific data*
  O'Connor, M. J., Hardi, J., Martinez-Romero, M., Somasundaram, S., Honick, B., Fisher, S. A., Pillai, A., Musen, M. A.
  2025; 12 (1): 265
- **A change language for ontologies and knowledge graphs.** *Database : the journal of biological databases and curation*
  Hegde, H., Vendetti, J., Goutte-Gattat, D., Caufield, J. H., Graybeal, J. B., Harris, N. L., Karam, N., Kindermann, C., Matentzoglu, N., Overton, J. A., Musen, M. A., Mungall, C. J.
  2025; 2025
- **Construction, Deployment, and Usage of the Human Reference Atlas Knowledge Graph for Linked Open Data.** *bioRxiv : the preprint server for biology*
  Bueckle, A., Herr, B. W., Hardi, J., Quardokus, E. M., Musen, M. A., Börner, K.
  2024
- **A general strategy for generating expert-guided, simplified views of ontologies.** *bioRxiv : the preprint server for biology*
  Caron, A. R., Puig-Barbe, A., Quardokus, E. M., Balhoff, J. P., Belfiore, J., Chipampe, N., Hardi, J., Herr, B. W., Kir, H., Roncaglia, P., Musen, M. A., McLaughlin, J. A., Borner, et al
  2024
- **A General-Purpose Data Harmonization Framework: Supporting Reproducible and Scalable Data Integration in the RADx Data Hub.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*
  Yu, J. K., Martínez-Romero, M., Horridge, M., Akdogan, M. U., Musen, M. A.
  2024; 2024: 1482-1491
- **Author Correction: Advances and prospects for the Human BioMolecular Atlas Program (HuBMAP).** *Nature cell biology*
  Jain, S., Pei, L., Spraggins, J. M., Angelo, M., Carson, J. P., Gehlenborg, N., Ginty, F., Goncalves, J. P., Hagood, J. S., Hickey, J. W., Kelleher, N. L., Laurent, L. C., Lin, et al
  2024
- **Structured Knowledge Base Enhances Effective Use of Large Language Models for Metadata Curation.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*
  Sundaram, S. S., Solomon, B., Khatri, A., Laumas, A., Khatri, P., Musen, M. A.
  2024; 2024: 1050-1058

- **Advances and prospects for the Human BioMolecular Atlas Program (HuBMAP).** *Nature cell biology*
  Jain, S., Pei, L., Spraggins, J. M., Angelo, M., Carson, J. P., Gehlenborg, N., Ginty, F., Gonçalves, J. P., Hagood, J. S., Hickey, J. W., Kelleher, N. L., Laurent, L. C., Lin, et al
  2023

- **Specimen, biological structure, and spatial ontologies in support of a Human Reference Atlas.** *Scientific data*
  Herr, B. W., Hardi, J., Quardokus, E. M., Bueckle, A., Chen, L., Wang, F., Caron, A. R., Osumi-Sutherland, D., Musen, M. A., Börner, K.
  2023; 10 (1): 171

- **The scalable precision medicine open knowledge engine (SPOKE): A massive knowledge graph of biomedical information.** *Bioinformatics (Oxford, England)*
  Morris, J. H., Soman, K., Akbas, R. E., Zhou, X., Smith, B., Meng, E. C., Huang, C. C., Cerono, G., Schenk, G., Rizk-Jackson, A., Harroud, A., Sanders, L., Costes, et al
  2023

- **Ontology Repositories and Semantic Artefact Catalogues with the OntoPortal Technology**
  Jonquet, C., Graybeal, J., Bouazzouni, S., Dorf, M., Fiore, N., Kechagioglou, X., Redmond, T., Rosati, I., Skrenchuk, A., Vendetti, J. L., Musen, M., OntoPortal Alliance
  edited by Payne, T. R., Presutti, Qi, G., Poveda-Villalon, M., Stoilos, G., Hollink, L., Kaoudi, Z., Cheng, G., Li, J.
  SPRINGER INTERNATIONAL PUBLISHING AG.2023: 38-58

- **A biomedical open knowledge network harnesses the power of AI to understand deep human biology.** *AI magazine*
  Baranzini, S. E., Börner, K., Morris, J., Nelson, C. A., Soman, K., Schleimer, E., Keiser, M., Musen, M., Pearce, R., Reza, T., Smith, B., Herr, B. W., Oskotsky, et al
  2022; 43 (1): 46-58

- **An Architecture for Attesting to the Provenance of Ontologies Using Blockchain Technologies**
  Curty, S., Fill, H., Goncalves, R. S., Musen, M. A.
  edited by Shishkov, B.
  SPRINGER INTERNATIONAL PUBLISHING AG.2022: 182-199

- **Using ethnographic methods to classify the human experience in medicine: a case study of the presence ontology.** *Journal of the American Medical Informatics Association : JAMIA*
  Maitra, A., Kamdar, M. R., Zulman, D. M., Haverfield, M. C., Brown-Johnson, C., Schwartz, R., Israni, S. T., Verghese, A., Musen, M. A.
  2021

- **Design of a FAIR digital data health infrastructure in Africa for COVID-19 reporting and research.** *Advanced genetics (Hoboken, N.J.)*
  van Reisen, M., Oladipo, F., Stokmans, M., Mpezamihgo, M., Folorunso, S., Schultes, E., Basajja, M., Aktau, A., Amare, S. Y., Taye, G. T., Purnama Jati, P. H., Chindoza, K., Wirtz, et al
  2021; 2 (2): e10050

- **An empirical meta-analysis of the life sciences linked open data on the web.** *Scientific data*
  Kamdar, M. R., Musen, M. A.
  2021; 8 (1): 24

- **FAIR Convergence Matrix: Optimizing the Reuse of Existing FAIR-Related Resources** *DATA INTELLIGENCE*
  Sustkova, H., Hettne, K., Wittenburg, P., Jacobsen, A., Kuhn, T., Pergl, R., Slifka, J., McQuilton, P., Magagna, B., Sansone, S., Stocker, M., Imming, M., Lannom, et al
  2020; 2 (1-2): 158-170

- **OrderRex clinical user testing: a randomized trial of recommender system decision support on simulated cases.** *Journal of the American Medical Informatics Association : JAMIA*
  Kumar, A., Aikens, R. C., Hom, J., Shieh, L., Chiang, J., Morales, D., Saini, D., Musen, M., Baiocchi, M., Altman, R., Goldstein, M. K., Asch, S., Chen, et al
  2020

- **Toward a Harmonized WHO Family of International Classifications Content Model.** *Studies in health technology and informatics*
  Tu, S. W., Nyulas, C. I., Tudorache, T., Musen, M. A., Martinuzzi, A., van Gool, C., Mea, V. D., Chute, C. G., Frattura, L., Hardiker, N., Napel, H. T., Madden, R., Almborg, et al
  2020; 270: 1409–10

- **A more decentralized vision for Linked Data** *SEMANTIC WEB*
  Polleres, A., Kamdar, M., Fernandez, J., Tudorache, T., Musen, M.
  2020; 11 (1): 101–13

- **Obstacles to the reuse of study metadata in ClinicalTrials.gov.** *Scientific data*
  Miron, L. n., Gonçalves, R. S., Musen, M. A.
  2020; 7 (1): 443

- **Physician Usage and Acceptance of a Machine Learning Recommender System for Simulated Clinical Order Entry.** *AMIA Joint Summits on Translational Science proceedings. AMIA Joint Summits on Translational Science*
  Chiang, J., Kumar, A., Morales, D., Saini, D., Hom, J., Shieh, L., Musen, M., Goldstein, M. K., Chen, J. H.
  2020; 2020: 89–97

- **Aligning Biomedical Metadata with Ontologies Using Clustering and Embeddings**
  Goncalves, R. S., Kamdar, M. R., Musen, M. A.
  edited by Hitzler, P., Fernandez, M., Janowicz, K., Zaveri, A., Gray, A. J., Lopez, Haller, A., Hammar, K.
  SPRINGER INTERNATIONAL PUBLISHING AG.2019: 146–61

- **HopRank: How Semantic Structure Influences Teleportation in PageRank (A Case Study on BioPortal)**
  Espin-Noboa, L., Lemmerich, F., Walk, S., Strohmaier, M., Musen, M., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2019: 2708–14

- **Using association rule mining and ontologies to generate metadata recommendations from multiple biomedical databases.** *Database : the journal of biological databases and curation*
  Martinez-Romero, M., O'Connor, M. J., Egyedi, A. L., Willrett, D., Hardi, J., Graybeal, J., Musen, M. A.
  2019; 2019

- **WebProtege: A Cloud-Based Ontology Editor**
  Horridge, M., Goncalves, R. S., Nyulas, C. I., Tudorache, T., Musen, M. A., ACM
  ASSOC COMPUTING MACHINERY.2019: 686–89

- **HopRank: How Semantic Structure Influences Teleportation in PageRank (A Case Study on BioPortal)**
  Espin-Noboa, L., Lemmerich, F., Walk, S., Strohmaier, M., Musen, M., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2019: 2708–14

- **Using association rule mining and ontologies to generate metadata recommendations from multiple biomedical databases.** *Database : the journal of biological databases and curation*
  Martinez-Romero, M., O'Connor, M. J., Egyedi, A. L., Willrett, D., Hardi, J., Graybeal, J., Musen, M. A.
  2019; 2019

- **WebProtege: A Cloud-Based Ontology Editor**
  Horridge, M., Goncalves, R. S., Nyulas, C. I., Tudorache, T., Musen, M. A., ACM
  ASSOC COMPUTING MACHINERY.2019: 686–89

- **The CAIRR Pipeline for Submitting Standards-Compliant B and T Cell Receptor Repertoire Sequencing Studies to the National Center for Biotechnology Information Repositories** *FRONTIERS IN IMMUNOLOGY*
  Bukhari, S., O'Connor, M. J., Martinez-Romero, M., Egyedi, A. L., Willrett, D., Graybeal, J., Musen, M. A., Rubelt, F., Cheung, K., Kleinstein, S. H.
  2018; 9

- **The CAIRR Pipeline for Submitting Standards-Compliant B and T Cell Receptor Repertoire Sequencing Studies to the National Center for Biotechnology Information Repositories.** *Frontiers in immunology*
  Bukhari, S. A., O'Connor, M. J., Martínez-Romero, M., Egyedi, A. L., Willrett, D., Graybeal, J., Musen, M. A., Rubelt, F., Cheung, K. H., Kleinstein, S. H.
  2018; 9: 1877

- **CEDAR OnDemand: a browser extension to generate ontology-based scientific metadata** *BMC BIOINFORMATICS*
  Bukhari, S., Martinez-Romero, M., Connor, M., Egyedi, A. L., Willrett, D., Graybeal, J., Musen, M. A., Cheung, K., Kleinstein, S. H.
  2018; 19: 268

- **Interpretation of biological experiments changes with evolution of the Gene Ontology and its annotations** *SCIENTIFIC REPORTS*

Tomczak, A., Mortensen, J. M., Winnenburg, R., Liu, C., Alessi, D. T., Swamy, V., Vallania, F., Lofgren, S., Haynes, W., Shah, N. H., Musen, M. A., Khatri, P.
2018; 8: 5115

- **Analyzing user interactions with biomedical ontologies: A visual perspective** *JOURNAL OF WEB SEMANTICS*
  Kamdar, M. R., Walk, S., Tudorache, T., Musen, M. A.
  2018; 49: 16–30

- **AgroPortal: A vocabulary and ontology repository for agronomy** *COMPUTERS AND ELECTRONICS IN AGRICULTURE*
  Jonquet, C., Toulet, A., Arnaud, E., Aubin, S., Yeumo, E., Emonet, V., Graybeal, J., Laporte, M., Musen, M. A., Pesce, V., Larmande, P.
  2018; 144: 126–43

- **How Sustainable are Biomedical Ontologies?** *AMIA ... Annual Symposium proceedings. AMIA Symposium*
  Geller, J., Keloth, V. K., Musen, M. A.
  2018; 2018: 470–79

- **BiOnIC: A Catalog of User Interactions with Biomedical Ontologies.** *The semantic Web--ISWC ... : ... International Semantic Web Conference ... proceedings. International Semantic Web Conference*
  Kamdar, M. R., Walk, S., Tudorache, T., Musen, M. A.
  2017; 10588: 130-138

- **The CEDAR Workbench: An Ontology-Assisted Environment for Authoring Metadata that Describe Scientific Experiments.** *The semantic Web--ISWC ... : ... International Semantic Web Conference ... proceedings. International Semantic Web Conference*
  Gonçalves, R. S., O'Connor, M. J., Martínez-Romero, M., Egyedi, A. L., Willrett, D., Graybeal, J., Musen, M. A.
  2017; 10588: 103-110

- **An ontology-driven tool for structured data acquisition using Web forms** *JOURNAL OF BIOMEDICAL SEMANTICS*
  Goncalves, R. S., Tu, S. W., Nyulas, C. I., Tierney, M. J., Musen, M. A.
  2017; 8: 26

- **NCBO Ontology Recommender 2.0: an enhanced approach for biomedical ontology recommendation.** *Journal of biomedical semantics*
  Martínez-Romero, M., Jonquet, C., O'Connor, M. J., Graybeal, J., Pazos, A., Musen, M. A.
  2017; 8 (1): 21-?

- **An Empirical Analysis of Ontology Reuse in BioPortal.** *Journal of biomedical informatics*
  Ochs, C., Perl, Y., Geller, J., Arabandi, S., Tudorache, T., Musen, M. A.
  2017

- **PhLeGrA: Graph Analytics in Pharmacology over the Web of Life Sciences Linked Open Data.** *Proceedings of the ... International World-Wide Web Conference. International WWW Conference*
  Kamdar, M. R., Musen, M. A.
  2017; 2017: 321-329

- **Use of Ontology Structure and Bayesian Models to Aid the Crowdsourcing of ICD-11 Sanctioning Rules.** *Journal of biomedical informatics*
  Lou, Y., Tu, S. W., Nyulas, C., Tudorache, T., Chalmers, R. J., Musen, M. A.
  2017

- **A systematic analysis of term reuse and term overlap across biomedical ontologies** *SEMANTIC WEB*
  Kamdar, M. R., Tudorache, T., Musen, M. A.
  2017; 8 (6): 853–71

- **The New HIT: Human Health Information Technology**
  Leung, T. I., Goldstein, M. K., Musen, M. A., Cronkite, R., Chen, J. H., Gottlieb, A., Leitersdorf, E.
  edited by Gundlapalli, A. V., Jaulent, M. C., Zhao, D.
  IOS PRESS.2017: 768–72

- **High-Risk Drug-Drug Interactions Between Clinical Practice Guidelines for Management of Chronic Conditions.** *AMIA Joint Summits on Translational Science proceedings. AMIA Joint Summits on Translational Science*
  Tso, G. J., Tu, S. W., Musen, M. A., Goldstein, M. K.
  2017; 2017: 531–39

- **Precision annotation of digital samples in NCBI's gene expression omnibus.** *Scientific data*
  Hadley, D. n., Pan, J. n., El-Sayed, O. n., Aljabban, J. n., Aljabban, I. n., Azad, T. D., Hadied, M. O., Raza, S. n., Rayikanti, B. A., Chen, B. n., Paik, H. n., Aran, D. n., Spatz, et al
  2017; 4: 170125
- **Fast and Accurate Metadata Authoring Using Ontology-Based Recommendations.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*
  Martinez-Romero, M., O'Connor, M. J., Shankar, R. D., Panahiazar, M., Willrett, D., Egyedi, A. L., Gevaert, O., Graybeal, J., Musen, M. A.
  2017; 2017: 1272–81
- **Mechanism-based Pharmacovigilance over the Life Sciences Linked Open Data Cloud.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*
  Kamdar, M. R., Musen, M. A.
  2017; 2017: 1014–23
- **A unified software framework for deriving, visualizing, and exploring abstraction networks for ontologies.** *Journal of biomedical informatics*
  Ochs, C., Geller, J., Perl, Y., Musen, M. A.
  2016; 62: 90-105
- **Utilizing a structural meta-ontology for family-based quality assurance of the BioPortal ontologies.** *Journal of biomedical informatics*
  Ochs, C., He, Z., Zheng, L., Geller, J., Perl, Y., Hripcsak, G., Musen, M. A.
  2016; 61: 63-76
- **Utilizing a structural meta-ontology for family-based of the BioPortal ontologies** *JOURNAL OF BIOMEDICAL INFORMATICS*
  Ochs, C., He, Z., Zheng, L., Geller, J., Perl, Y., Hripcsak, G., Musen, M. A.
  2016; 61: 63-76
- **Is the crowd better as an assistant or a replacement in ontology engineering? An exploration through the lens of the Gene Ontology.** *Journal of biomedical informatics*
  Mortensen, J. M., Telis, N., Hughey, J. J., Fan-Minogue, H., Van Auken, K., Dumontier, M., Musen, M. A.
  2016; 60: 199-209
- **An Open Repository Model for Acquiring Knowledge About Scientific Experiments**
  O'Connor, M. J., Martnez-Romero, M., Egyedi, A. L., Willrett, D., Graybeal, J., Musen, M. A.
  edited by Blomqvist, E., Ciancarini, P., Poggi, F., Vitali, F.
  SPRINGER INT PUBLISHING AG.2016: 762–77
- **Snap-SPARQL: A Java Framework for Working with SPARQL and OWL**
  Horridge, M., Musen, M.
  edited by Tamma, Dragoni, M., Goncalves, R., Lawrynowicz, A.
  SPRINGER INT PUBLISHING AG.2016: 154–65
- **How to apply Markov chains for modeling sequential edit patterns in collaborative ontology-engineering projects** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Walk, S., Singer, P., Strohmaier, M., Helic, D., Noy, N. F., Musen, M. A.
  2015; 84: 51-66
- **The center for expanded data annotation and retrieval.** *Journal of the American Medical Informatics Association*
  Musen, M. A., Bean, C. A., Cheung, K., Dumontier, M., Durante, K. A., Gevaert, O., Gonzalez-Beltran, A., Khatri, P., Kleinstein, S. H., O'Connor, M. J., Pouliot, Y., Rocca-Serra, P., Sansone, et al
  2015; 22 (6): 1148-1152
- **Using ontologies to model human navigation behavior in information networks: A study based on Wikipedia.** *Semantic web*
  Lamprecht, D., Strohmaier, M., Helic, D., Nyulas, C., Tudorache, T., Noy, N. F., Musen, M. A.
  2015; 6 (4): 403-422
- **Investigating Term Reuse and Overlap in Biomedical Ontologies.** *CEUR workshop proceedings*
  Kamdar, M. R., Tudorache, T., Musen, M. A.
  2015; 1515
- **Analysis and Prediction of User Editing Patterns in Ontology Development Projects.** *Journal on data semantics*

Wang, H., Tudorache, T., Dou, D., Noy, N. F., Musen, M. A.
2015; 4 (2): 117-132

- **The Protégé Project: A Look Back and a Look Forward.** *AI matters*
  Musen, M. A.
  2015; 1 (4): 4-12

- **Using the wisdom of the crowds to find critical errors in biomedical ontologies: a study of SNOMED CT.** *Journal of the American Medical Informatics Association*
  Mortensen, J. M., Minty, E. P., Januszyk, M., Sweeney, T. E., Rector, A. L., Noy, N. F., Musen, M. A.
  2015; 22 (3): 640-648

- **Data breaches of protected health information in the United States.** *JAMA*
  Liu, V., Musen, M. A., Chou, T.
  2015; 313 (14): 1471-1473

- **Using ontologies to model human navigation behavior in information networks: A study based on Wikipedia** *SEMANTIC WEB*
  Lamprecht, D., Strohmaier, M., Helic, D., Nyulas, C., Tudorache, T., Noy, N. F., Musen, M. A.
  2015; 6 (4): 403-422

- **Applied ontology: The next decade begins** *APPLIED ONTOLOGY*
  Guarino, N., Musen, M.
  2015; 10 (1): 1–4

- **Understanding How Users Edit Ontologies: Comparing Hypotheses About Four Real-World Projects**
  Walk, S., Singer, P., Noboa, L., Tudorache, T., Musen, M. A., Strohmaier, M.
  edited by Arenas, M., Corcho, O., Simperl, E., Strohmaier, M., DAquin, M., Srinivas, K., Groth, P., Dumontier, M., Heflin, J., Thirunarayan, K., Staab, S.
  SPRINGER INT PUBLISHING AG.2015: 551–68

- **User Extensible System to Identify Problems in OWL Ontologies and SWRL Rules**
  Orlando, J., Musen, M. A., Moreira, D. A.
  edited by Bassiliades, N., Gottlob, G., Sadri, F., Paschke, A., Roman, D.
  SPRINGER-VERLAG BERLIN.2015: 112–26

- **Using Aggregate Taxonomies to Summarize SNOMED CT Evolution**
  Ochs, C., Perl, Y., Geller, J., Musen, M.
  edited by Huan, J., Miyano, S., Shehu, A., Hu, Ma, B., Rajasekaran, S., Gombar, V. K., Schapranow, I. M., Yoo, I. H., Zhou, J. Y., Chen, B., Pai, Pierce, B.
  IEEE.2015: 1008–15

- **Ten years of Applied Ontology** *APPLIED ONTOLOGY*
  Guarino, N., Musen, M. A.
  2015; 10 (3-4): 169–70

- **Helping Users Bootstrap Ontologies: An Empirical Investigation**
  Zhang, Y., Tudorache, T., Horridge, M., Musen, M. A., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2015: 3395–98

- **Toward a science of learning systems: a research agenda for the high-functioning Learning Health System** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Friedman, C., Rubin, J., Brown, J., Buntin, M., Corn, M., Etheredge, L., Gunter, C., Musen, M., Platt, R., Stead, W., Sullivan, K., Van Houweling, D.
  2015; 22 (1): 43-50

- **A Method to Compare ICF and SNOMED CT for Coverage of U.S. Social Security Administration's Disability Listing Criteria.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Tu, S. W., Nyulas, C. I., Tudorache, T., Musen, M. A.
  2015; 2015: 1224-1233

- **Automating Identification of Multiple Chronic Conditions in Clinical Practice Guidelines.** *AMIA Joint Summits on Translational Science proceedings AMIA Summit on Translational Science*

Leung, T. I., Jalal, H., Zulman, D. M., Dumontier, M., Owens, D. K., Musen, M. A., Goldstein, M. K.
2015; 2015: 456-460

- **Discovering Beaten Paths in Collaborative Ontology-Engineering Projects using Markov Chains** *JOURNAL OF BIOMEDICAL INFORMATICS*
  Walk, S., Singer, P., Strohmaier, M., Tudorache, T., Musen, M. A., Noy, N. F.
  2014; 51: 254-271
- **WebProtégé: a collaborative Web-based platform for editing biomedical ontologies.** *Bioinformatics*
  Horridge, M., Tudorache, T., Nuylas, C., Vendetti, J., Noy, N. F., Musen, M. A.
  2014; 30 (16): 2384-2385
- **Cross-domain targeted ontology subsets for annotation: The case of SNOMED CORE and RxNorm.** *Journal of biomedical informatics*
  López-García, P., LePendu, P., Musen, M., Illarramendi, A.
  2014; 47: 105-111
- **Investigating Collaboration Dynamics in Different Ontology Development Environments** *7th International Conference on Knowledge Science, Engineering and Management (KSEM)*
  Rospocher, M., Tudorache, T., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2014: 302–313
- **Knowledge Representation** *METHODS IN BIOMEDICAL INFORMATICS: A PRAGMATIC APPROACH*
  Musen, M. A.
  edited by Sarkar, I. N.
  2014: 49–79
- **Organizational factors affecting implementation of the ATHENA-Hypertension clinical decision support system during the VA's nation-wide information technology restructuring: a case study** *Health System*
  Shluzas, L. M., Cronkite, R. C., Hoffman, B. B., Breeling, J., Musen, M. A., Owens, D. K., Goldstein, M. K.
  2014
- **An empirically derived taxonomy of errors in SNOMED CT.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Mortensen, J. M., Musen, M. A., Noy, N. F.
  2014; 2014: 899-906
- **A Study on the Atomic Decomposition of Ontologies** *13th International Semantic Web Conference (ISWC)*
  Horridge, M., Mortensen, J. M., Parsia, B., Sattler, U., Musen, M. A.
  SPRINGER INT PUBLISHING AG.2014: 65–80
- **How ontologies are made: Studying the hidden social dynamics behind collaborative ontology engineering projects** *JOURNAL OF WEB SEMANTICS*
  Strohmaier, M., Walk, S., Poeschko, J., Lamprecht, D., Tudorache, T., Nyulas, C., Musen, M. A., Noy, N. F.
  2013; 20: 18-34
- **How Ontologies are Made: Studying the Hidden Social Dynamics Behind Collaborative Ontology Engineering Projects.** *Web semantics (Online)*
  Strohmaier, M., Walk, S., Pöschko, J., Lamprecht, D., Tudorache, T., Nyulas, C., Musen, M. A., Noy, N. F.
  2013; 20
- **The knowledge acquisition workshops: A remarkable convergence of ideas** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Musen, M. A.
  2013; 71 (2): 195-199
- **PragmatiX: An Interactive Tool for Visualizing the Creation Process Behind Collaboratively Engineered Ontologies.** *International journal on Semantic Web and information systems*
  Walk, S., Pöschko, J., Strohmaier, M., Andrews, K., Tudorache, T., Noy, N. F., Nyulas, C., Musen, M. A.
  2013; 9 (1): 45-78
- **WebProtege: A collaborative ontology editor and knowledge acquisition tool for the Web** *SEMANTIC WEB*
  Tudorache, T., Nyulas, C., Noy, N. F., Musen, M. A.
  2013; 4 (1): 89-99

- **BioPortal as a Dataset of Linked Biomedical Ontologies and Terminologies in RDF.** *Semantic web*
  Salvadores, M., Alexander, P. R., Musen, M. A., Noy, N. F.
  2013; 4 (3): 277-284
- **WebProtégé: A Collaborative Ontology Editor and Knowledge Acquisition Tool for the Web.** *Semantic web*
  Tudorache, T., Nyulas, C., Noy, N. F., Musen, M. A.
  2013; 4 (1): 89-99
- **BioPortal as a dataset of linked biomedical ontologies and terminologies in RDF** *SEMANTIC WEB*
  Salvadores, M., Alexander, P. R., Musen, M. A., Noy, N. F.
  2013; 4 (3): 277-284
- **Analysis of User Editing Patterns in Ontology Development Projects** *On The Move (OTM) Federated International Conference*
  Wang, H., Tudorache, T., Dou, D., Noy, N. F., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2013: 470–487
- **Getting Lucky in Ontology Search: A Data-Driven Evaluation Framework for Ontology Ranking** *12th International Semantic Web Conference (ISWC)*
  Noy, N. F., Alexander, P. R., Harpaz, R., Whetzel, P. L., Fergerson, R. W., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2013: 444–459
- **Using Semantic Web in ICD-11: Three Years Down the Road** *12th International Semantic Web Conference (ISWC)*
  Tudorache, T., Nyulas, C. I., Noy, N. F., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2013: 195–211
- **Simplified OWL Ontology Editing for the Web: Is WebProtege Enough?** *12th International Semantic Web Conference (ISWC)*
  Horridge, M., Tudorache, T., Vendetti, J., Nyulas, C. I., Musen, M. A., Noy, N. F.
  SPRINGER-VERLAG BERLIN.2013: 200–215
- **Crowdsourcing the verification of relationships in biomedical ontologies.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Mortensen, J. M., Musen, M. A., Noy, N. F.
  2013; 2013: 1020-1029
- **PragmatiX: An Interactive Tool for Visualizing the Creation Process Behind Collaboratively Engineered Ontologies** *INTERNATIONAL JOURNAL ON SEMANTIC WEB AND INFORMATION SYSTEMS*
  Walk, S., Poeschko, J., Strohmaier, M., Andrews, K., Tudorache, T., Noy, N. F., Nyulas, C., Musen, M. A.
  2013; 9 (1): 45-78
- **Chapter 9: Analyses Using Disease Ontologies** *PLOS COMPUTATIONAL BIOLOGY*
  Shah, N. H., Cole, T., Musen, M. A.
  2012; 8 (12)
- **AMIA Board white paper: definition of biomedical informatics and specification of core competencies for graduate education in the discipline** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Kulikowski, C. A., Shortliffe, E. H., Currie, L. M., Elkin, P. L., Hunter, L. E., Johnson, T. R., Kalet, I. J., Lenert, L. A., Musen, M. A., Ozbolt, J. G., Smith, J. W., Tarczy-Hornoch, P. Z., Williamson, et al
  2012; 19 (6): 931-938
- **Unified Medical Language System term occurrences in clinical notes: a large-scale corpus analysis** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Wu, S. T., Liu, H., Li, D., Tao, C., Musen, M. A., Chute, C. G., Shah, N. H.
  2012; 19 (E1): E149-E156
- **The National Center for Biomedical Ontology** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Musen, M. A., Noy, N. F., Shah, N. H., Whetzel, P. L., Chute, C. G., Story, M., Smith, B.
  2012; 19 (2): 190-195
- **Applications of ontology design patterns in biomedical ontologies.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Mortensen, J. M., Horridge, M., Musen, M. A., Noy, N. F.

2012; 2012: 643-652

- **Deriving an abstraction network to support quality assurance in OCRe.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Ochs, C., Agrawal, A., Perl, Y., Halper, M., Tu, S. W., Carini, S., Sim, I., Noy, N., Musen, M., Geller, J.
  2012; 2012: 681-689

- **Enabling enrichment analysis with the Human Disease Ontology.** *Journal of biomedical informatics*
  LePendu, P., Musen, M. A., Shah, N. H.
  2011; 44: S31-8

- **Empowering industrial research with shared biomedical vocabularies** *DRUG DISCOVERY TODAY*
  Harland, L., Larminie, C., Sansone, S., Popa, S., Marshall, M. S., Braxenthaler, M., Cantor, M., Filsell, W., Forster, M. J., Huang, E., Matern, A., Musen, M., Saric, et al
  2011; 16 (21-22): 940-947

- **NCBO Resource Index: Ontology-based search and mining of biomedical resources** *JOURNAL OF WEB SEMANTICS*
  Jonquet, C., LePendu, P., Falconer, S., Coulet, A., Noy, N. F., Musen, M. A., Shah, N. H.
  2011; 9 (3): 316-324

- **NCBO Resource Index: Ontology-Based Search and Mining of Biomedical Resources.** *Web semantics (Online)*
  Jonquet, C., Lependu, P., Falconer, S., Coulet, A., Noy, N. F., Musen, M. A., Shah, N. H.
  2011; 9 (3): 316-324

- **BioPortal: enhanced functionality via new Web services from the National Center for Biomedical Ontology to access and use ontologies in software applications** *NUCLEIC ACIDS RESEARCH*
  Whetzel, P. L., Noy, N. F., Shah, N. H., Alexander, P. R., Nyulas, C., Tudorache, T., Musen, M. A.
  2011; 39: W541-W545

- **The Biomedical Resource Ontology (BRO) to enable resource discovery in clinical and translational research** *JOURNAL OF BIOMEDICAL INFORMATICS*
  Tenenbaum, J. D., Whetzel, P. L., Anderson, K., Borromeo, C. D., Dinov, I. D., Gabriel, D., Kirschner, B., Mirel, B., Morris, T., Noy, N., Nyulas, C., Rubenson, D., Saxman, et al
  2011; 44 (1): 137-145

- **How orthogonal are the OBO Foundry ontologies?** *Journal of biomedical semantics*
  Ghazvinian, A., Noy, N. F., Musen, M. A.
  2011; 2: S2-?

- **ARGOS Policy Brief on Semantic Interoperability** *TRANSATLANTIC COOPERATION SURROUNDING HEALTH RELATED INFORMATION AND COMMUNICATION TECHNOLOGY*
  Kalra, D., Musen, M., Smith, B., Ceusters, W., De Moor, G.
  edited by DeMoor, G. J.
  2011; 170: 1–15

- **Integration and publication of heterogeneous text-mined relationships on the Semantic Web.** *Journal of biomedical semantics*
  Coulet, A., Garten, Y., Dumontier, M., Altman, R. B., Musen, M. A., Shah, N. H.
  2011; 2: S10-?

- **Using text to build semantic networks for pharmacogenomics** *JOURNAL OF BIOMEDICAL INFORMATICS*
  Coulet, A., Shah, N. H., Garten, Y., Musen, M., Altman, R. B.
  2010; 43 (6): 1009-1019

- **Building a biomedical ontology recommender web service.** *Journal of biomedical semantics*
  Jonquet, C., Musen, M. A., Shah, N. H.
  2010; 1: S1-?

- **Mapping Master: A Flexible Approach for Mapping Spreadsheets to OWL** *9th International Semantic Web Conference*
  O'Connor, M. J., Halaschek-Wiener, C., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2010: 194–208

- **Ontology Development for the Masses: Creating ICD-11 in WebProtege** *17th International Conference on Knowledge Engineering and Management by the Masses (EKAW)*
  Tudorache, T., Falconer, S., Noy, N. F., Nyulas, C., Uestuen, T. B., Storey, M., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2010: 74–89
- **Optimize First, Buy Later: Analyzing Metrics to Ramp-Up Very Large Knowledge Bases** *9th International Semantic Web Conference*
  LePendu, P., Noy, N. F., Jonquet, C., Alexander, P. R., Shah, N. H., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2010: 486–501
- **A Typology for Modeling Processes in Clinical Guidelines and Protocols** *1st International Conference on Security-Enriched Urban Computing and Smart Grid*
  Tu, S. W., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2010: 545–553
- **Will Semantic Web Technologies Work for the Development of ICD-11?** *9th International Semantic Web Conference*
  Tudorache, T., Falconer, S., Nyulas, C., Noy, N. F., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2010: 257–272
- **The Lexicon Builder Web service: Building Custom Lexicons from two hundred Biomedical Ontologies.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Parai, G. K., Jonquet, C., xu, r., Musen, M. A., Shah, N. H.
  2010; 2010: 587-591
- **A Comprehensive Analysis of Five Million UMLS Metathesaurus Terms Using Eighteen Million MEDLINE Citations.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  xu, r., Musen, M. A., Shah, N. H.
  2010; 2010: 907-911
- **The ontology life cycle: Integrated tools for editing, publishing, peer review, and evolution of ontologies.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Noy, N., Tudorache, T., Nyulas, C., Musen, M.
  2010; 2010: 552-556
- **Supporting the Collaborative Authoring of ICD-11 with WebProtégé.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Tudorache, T., Falconer, S., Nyulas, C., Storey, M., Ustün, T. B., Musen, M. A.
  2010; 2010: 802-806
- **An ontology-neutral framework for enrichment analysis.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Tirrell, R., Evani, U., Berman, A. E., Mooney, S. D., Musen, M. A., Shah, N. H.
  2010; 2010: 797-801
- **Software-engineering challenges of building and deploying reusable problem solverse** *AI EDAM-ARTIFICIAL INTELLIGENCE FOR ENGINEERING DESIGN ANALYSIS AND MANUFACTURING*
  O'Connor, M. J., Nyulas, C., Tu, S., Buckeridge, D. L., Okhmatovskaia, A., Musen, M. A.
  2009; 23 (4): 339-356
- **Software-engineering challenges of building and deploying reusable problem solvers.** *Artificial intelligence for engineering design, analysis and manufacturing : AI EDAM*
  O'Connor, M. J., Nyulas, C., Tu, S., Buckeridge, D. L., Okhmatovskaia, A., Musen, M. A.
  2009; 23 (Spec Iss 4): 339-356
- **Development of Large-Scale Functional Brain Networks in Children** *PLOS BIOLOGY*
  Supekar, K., Musen, M., Menon, V.
  2009; 7 (7)
- **BioPortal: ontologies and integrated data resources at the click of a mouse** *NUCLEIC ACIDS RESEARCH*
  Noy, N. F., Shah, N. H., Whetzel, P. L., Dai, B., Dorf, M., Griffith, N., Jonquet, C., Rubin, D. L., Storey, M., Chute, C. G., Musen, M. A.
  2009; 37: W170-W173

- **Computational neuroanatomy: ontology-based representation of neural components and connectivity** *1st Summit on Translational Bioinformatics*
  Rubin, D. L., Talos, I., Halle, M., Musen, M. A., Kikinis, R.
  BIOMED CENTRAL LTD.2009

- **Ontology-driven indexing of public datasets for translational bioinformatics** *1st Summit on Translational Bioinformatics*
  Shah, N. H., Jonquet, C., Chiang, A. P., Butte, A. J., Chen, R., Musen, M. A.
  BIOMED CENTRAL LTD.2009

- **Creating mappings for ontologies in biomedicine: simple methods work.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Ghazvinian, A., Noy, N. F., Musen, M. A.
  2009; 2009: 198-202

- **Traversing Ontologies to Extract Views** *MODULAR ONTOLOGIES: CONCEPTS, THEORIES AND TECHNIQUES FOR KNOWLEDGE MODULARIZATION*
  Noy, N. F., Musen, M. A.
  edited by Stuckenschmidt, H., Parent, C., Spaccapietra, S.
  2009; 5445: 245–60

- **Semantic Wiki Search** *6th European Sematic Web Conference*
  Haase, P., Herzig, D., Musen, M., Tran, T.
  SPRINGER-VERLAG BERLIN.2009: 445–460

- **What Four Million Mappings Can Tell You about Two Hundred Ontologies** *8th International Semantic Web Conference*
  Ghazvinian, A., Noy, N. F., Jonquet, C., Shah, N., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2009: 229–242

- **A Bayesian network model for analysis of detection performance in surveillance systems.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Izadi, M., Buckeridge, D., Okhmatovskaia, A., Tu, S. W., O'Connor, M. J., Nyulas, C., Musen, M. A.
  2009; 2009: 276-280

- **Comparison of concept recognizers for building the Open Biomedical Annotator** *2nd Summit on Translational Bioinformatics*
  Shah, N. H., Bhatia, N., Jonquet, C., Rubin, D., Chiang, A. P., Musen, M. A.
  BIOMED CENTRAL LTD.2009

- **The open biomedical annotator.** *Summit on translational bioinformatics*
  Jonquet, C., Shah, N. H., Musen, M. A.
  2009; 2009: 56-60

- **Understanding Detection Performance in Public Health Surveillance: Modeling Aberrancy-detection Algorithms** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Buckeridge, D. L., Okhmatovskaia, A., Tu, S., O'Connor, M., Nyulas, C., Musen, M. A.
  2008; 15 (6): 760-769

- **Reports of the AAAI 2008 Spring Symposia** *AI MAGAZINE*
  Balduccini, M., Baral, C., Brodaric, B., Colton, S., Fox, P., Gutelius, D., Hinkelmann, K., Horswill, I., Huberman, B., Hudlicka, E., Lerman, K., Lisetti, C., McGuinness, et al
  2008; 29 (3): 107-115

- **Network analysis of intrinsic functional brain connectivity in Alzheimer's disease** *PLOS COMPUTATIONAL BIOLOGY*
  Supekar, K., Menon, V., Rubin, D., Musen, M., Greicius, M. D.
  2008; 4 (6)

- **iTools: A Framework for Classification, Categorization and Integration of Computational Biology Resources** *PLOS ONE*
  Dinov, I. D., Rubin, D., Lorensen, W., Dugan, J., Ma, J., Murphy, S., Kirschner, B., Bug, W., Sherman, M., Floratos, A., Kennedy, D., Jagadish, H. V., Schmidt, et al
  2008; 3 (5)

- **A prototype symbolic model of canonical functional neuroanatomy of the motor system** *JOURNAL OF BIOMEDICAL INFORMATICS*
  Talos, I., Rubin, D. L., Halle, M., Musen, M., Kikinis, R.
  2008; 41 (2): 251-263
- **Developing biomedical ontologies collaboratively.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Noy, N. F., Tudorache, T., de Coronado, S., Musen, M. A.
  2008: 520-524
- **Collecting Community-Based Mappings in an Ontology Repository** *7th International Semantic Web Conference (ISWC 2008)*
  Noy, N. F., Griffith, N., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2008: 371–386
- **Supporting Collaborative Ontology Development in Protege** *7th International Semantic Web Conference (ISWC 2008)*
  Tudorache, T., Noy, N. F., Tu, S., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2008: 17–32
- **A system for ontology-based annotation of biomedical data** *5th International Workshop on Data Integration in the Life Sciences*
  Jonquet, C., Musen, M. A., Shah, N.
  SPRINGER-VERLAG BERLIN.2008: 144–152
- **A Generic Ontology for Collaborative Ontology-Development Workflows** *16th International Conference on Knowledge Engineering - Practice and Patterns*
  Sebastian, A., Noy, N. F., Tudorache, T., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2008: 318–328
- **Calling on a million minds for community annotation in WikiProteins** *GENOME BIOLOGY*
  Mons, B., Ashburner, M., Chichester, C., van Mulligen, E., Weeber, M., den Dunnen, J., van Ommen, G., Musen, M., Cockerill, M., Hermjakob, H., Mons, A., Packer, A., Pacheco, et al
  2008; 9 (5)
- **Predicting outbreak detection in public health surveillance: quantitative analysis to enable evidence-based method selection.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Buckeridge, D. L., Okhmatovskaia, A., Tu, S., O'Connor, M., Nyulas, C., Musen, M. A.
  2008: 76-80
- **BioPortal: ontologies and data resources with the click of a mouse.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Musen, M. A., Shah, N. H., Noy, N. F., Dai, B. Y., Dorf, M., Griffith, N., Buntrok, J., Jonquet, C., Montegut, M. J., Rubin, D. L.
  2008: 1223-1224
- **Representing the NCI Thesaurus in OWL DL: Modeling tools help modeling languages.** *Applied ontology*
  Noy, N. F., de Coronado, S., Solbrig, H., Fragoso, G., Hartel, F. W., Musen, M. A.
  2008; 3 (3): 173-190
- **Comparison of ontology-based semantic-similarity measures.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Lee, W., Shah, N., Sundlass, K., Musen, M.
  2008: 384-388
- **UMLS-Query: a perl module for querying the UMLS.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Shah, N. H., Muse, M. A.
  2008: 652-656
- **Protege: A tool for managing and using terminology in radiology applications** *JOURNAL OF DIGITAL IMAGING*
  Rubin, D. L., Noy, N. F., Musen, M. A.
  2007; 20: 34-46
- **The SAGE guideline model: Achievements and overview** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Ru, S. W., Campbell, J. R., Glasgow, J., Nyman, M. A., McClure, R., McClay, J., Parker, C., Hrabak, K. M., Berg, D., Weida, T., Mansfield, J. G., Musen, M. A., Abarbanel, et al
  2007; 14 (5): 589-598

- **Annotation and query of tissue microarray data using the NCI Thesaurus** *BMC BIOINFORMATICS*
  Shah, N. H., Rubin, D. L., Espinosa, I., Montgomery, K., Musen, M. A.
  2007; 8
- **OBO to OWL: a protege OWL tab to read/save OBO ontologies** *BIOINFORMATICS*
  Moreira, D. A., Musen, M. A.
  2007; 23 (14): 1868-1870
- **Using semantic dependencies for consistency management of an ontology of brain-cortex anatomy** *1st International Workshop on Formal Biomedical Knowledge Representation (KR-MED 2004)*
  Dameron, O., Musen, M. A., Gibaud, B.
  ELSEVIER SCIENCE BV.2007: 217–25
- **Technology for Building Intelligent Systems: From Psychology to Engineering** *52nd Nebraska Symposium on Motivation*
  Musen, M. A.
  UNIV NEBRASKA PRESS.2007: 145–184
- **Searching Ontologies Based on Content: Experiments in the Biomedical Domain** *4th International Conference on Knowledge Capture*
  Alani, H., Noy, N. F., Shah, N., Shadbolt, N., Musen, M. A.
  ASSOC COMPUTING MACHINERY.2007: 55–62
- **Document-oriented views of guideline knowledge bases** *11th Conference on Artificial Intelligence in Medicine (AIME 2007)*
  Tu, S. W., Condamoor, S., Mather, T., Hall, R., Jones, N., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2007: 431–440
- **Using semantic web technologies for knowledge-driven querying of biomedical data** *11th Conference on Artificial Intelligence in Medicine (AIME 2007)*
  O'Connor, M., Shankar, R., Tu, S., Nyulas, C., Parrish, D., Musen, M., Das, A.
  SPRINGER-VERLAG BERLIN.2007: 267–276
- **Querying the semantic web with SWRL** *International Symposium on Rule Interchange and Applications*
  O'Connor, M., Tu, S., Nyulas, C., Das, A., Musen, M.
  SPRINGER-VERLAG BERLIN.2007: 155–159
- **Efficiently querying relational databases using OWL and SWRL** *1st International Conference on Web Reasoning and Rule Systems*
  O'Connor, M., Shankar, R., Tu, S., Nyulas, C., Das, A., Musen, M.
  SPRINGER-VERLAG BERLIN.2007: 361–363
- **Knowledge Zone: A Public Repository of Peer-Reviewed Biomedical Ontologies** *12th World Congress on Health (Medical) Informatics*
  Supekar, K., Rubin, D., Noy, N., Musen, M.
  I O S PRESS.2007: 812–816
- **Interpretation errors related to the GO annotation file format.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Moreira, D. A., Shah, N. H., Musen, M. A.
  2007: 538-542
- **Evaluating detection of an inhalational anthrax outbreak** *EMERGING INFECTIOUS DISEASES*
  Buckeridge, D. L., Owens, D. K., Switzer, P., Frank, J., Musen, M. A.
  2006; 12 (12): 1942-1949
- **Using ontologies linked with geometric models to reason about penetrating injuries** *ARTIFICIAL INTELLIGENCE IN MEDICINE*
  Rubin, D. L., Dameron, O., Bashir, Y., Grossman, D., Dev, P., Musen, M. A.
  2006; 37 (3): 167-176
- **National Center for Biomedical Ontology: Advancing biomedicine through structured organization of scientific knowledge** *OMICS-A JOURNAL OF INTEGRATIVE BIOLOGY*
  Rubin, D. L., Lewis, S. E., Mungall, C. J., Misra, S., Westerfield, M., Ashburner, M., Sim, I., Chute, C. G., Solbrig, H., Storey, M., Smith, B., Day-Richter, J., Noy, et al
  2006; 10 (2): 185-198

- **Wrestling with SUMO and bio-ontologies.** *Nature biotechnology*
  Stoeckert, C., Ball, C., Brazma, A., Brinkman, R., Causton, H., Fan, L., Fostel, J., Fragoso, G., Heiskanen, M., Holstege, F., Morrison, N., Parkinson, H., Quackenbush, et al
  2006; 24 (1): 21-2; author reply 23

- **To the editor** *NATURE BIOTECHNOLOGY*
  Stoeckert, C., Ball, C., Brazma, A., Brinkman, R., Causton, H., Fan, L. J., Fostel, J., Fragoso, G., Heiskanen, M., Holstege, F., Morrison, N., Parkinson, H., Quackenbush, et al
  2006; 24 (1): 21-22

- **A framework for ontology evolution in collaborative environments** *5th International Semantic Web Conference (ISWC 2006)*
  Noy, N. F., Chugh, A., Liu, W., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2006: 544–558

- **Wrestling with SUMO and bio-ontologies** *NATURE BIOTECHNOLOGY*
  Musen, M. A., Lewis, S., Smith, B.
  2006; 24 (1): 21-21

- **Identifying barriers to hypertension guideline adherence using clinician feedback at the point of care.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Lin, N. D., Martins, S. B., Chan, A. S., Coleman, R. W., Bosworth, H. B., Oddone, E. Z., Shankar, R. D., Musen, M. A., Hoffman, B. B., Goldstein, M. K.
  2006: 494-498

- **Ontology-based annotation and query of tissue microarray data.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Shah, N. H., Rubin, D. L., Supekar, K. S., Musen, M. A.
  2006: 709-713

- **Use of declarative statements in creating and maintaining computer-interpretable knowledge bases for guideline-based care.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Tu, S. W., Hrabak, K. M., Campbell, J. R., Glasgow, J., Nyman, M. A., McClure, R., McClay, J., Abarbanel, R., Mansfield, J. G., Martins, S. M., Goldstein, M. K., Musen, M. A.
  2006: 784-788

- **Ontology-based representation of simulation models of physiology.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Rubin, D. L., Grossman, D., Neal, M., Cook, D. L., Bassingthwaighte, J. B., Musen, M. A.
  2006: 664-668

- **Ontology-centered syndromic surveillance for bioterrorism** *AAAI Spring Symposium on AI Technologies for Homeland Security*
  Crubezy, M., O'Connor, M., Pincus, Z., Musen, M. A., Buckeridge, D. L.
  IEEE COMPUTER SOC.2005: 26–35

- **An evaluation model for syndromic surveillance: assessing the performance of a temporal algorithm.** *MMWR. Morbidity and mortality weekly report*
  Buckeridge, D. L., Switzer, P., Owens, D., SIEGRIST, D., Pavlin, J., Musen, M.
  2005; 54: 109-115

- **EZPAL: Environment for composing constraint axioms by instantlating templates** *6th International Protege Users Conference*
  Hou, C. S., Musen, M. A., Noy, N. F.
  ACADEMIC PRESS LTD- ELSEVIER SCIENCE LTD.2005: 578–96

- **Challenges in converting frame-based ontology into OWL: the Foundational Model of Anatomy case-study.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Dameron, O., Rubin, D. L., Musen, M. A.
  2005: 181-185

- **Supporting rule system interoperability on the semantic web with SWRL** *4th International Semantic Web Conference (ISWC 2005)*
  O'Connor, M. T., Knublauch, H., Tu, S., Grosof, B., Dean, M., Grosso, W., Musen, M.
  SPRINGER-VERLAG BERLIN.2005: 974–986

- **Semantic clinical guideline documents.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Eriksson, H., Tu, S. W., Musen, M.
  2005: 236-240

- **Use of description logic classification to reason about consequences of penetrating injuries.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Rubin, D. L., Dameron, O., Musen, M. A.
  2005: 649-653

- **Using an Ontology of Human Anatomy to Inform Reasoning with Geometric Models** *13th Conference on Medicine Meets Virtual Reality*
  Rubin, D. L., Bashir, Y., Grossman, D., Dev, P., Musen, M. A.
  I O S PRESS.2005: 429–435

- **Ontology metadata to support the building of a library of biomedical ontologies.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Supekar, K., Musen, M.
  2005: 1126-?

- **Translating research into practice: Organizational issues in implementing automated decision support for hypertension in three medical centers** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Goldstein, M. K., Coleman, R. W., Tu, S. W., Shankar, R. D., O'Connor, M. J., Musen, M. A., Martins, S. B., Lavori, P. W., Shlipak, M. G., Oddone, E., Advani, A. A., Gholami, P., Hoffman, et al
  2004; 11 (5): 368-376

- **Ontology versioning in an ontology management framework** *IEEE INTELLIGENT SYSTEMS*
  Noy, N. F., Musen, M. A.
  2004; 19 (4): 6-13

- **Pushing the envelope: challenges in a frame-based representation of human anatomy** *DATA & KNOWLEDGE ENGINEERING*
  Noy, N. F., Musen, M. A., Mejino, J. L., Rosse, C.
  2004; 48 (3): 335-359

- **Linking ontologies with three-dimensional models of anatomy to predict the effects of penetrating injuries.** *Conference proceedings : ... Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Conference*
  Rubin, D. L., Bashir, Y., Grossman, D., Dev, P., Musen, M. A.
  2004; 5: 3128-3131

- **Linking ontologies with three-dimensional models of anatomy to predict the effects of penetrating injuries** *26th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society*
  Rubin, D. L., Bashir, Y., Grossman, D., Dev, P., Musen, M. A.
  IEEE.2004: 3128–31

- **A knowledge-based framework for deploying surveillance problem solvers** *International Conference on Information and Knowledge Engineering (IKE 04)*
  Buckeridge, D. L., O'Connor, M. J., Xu, H. B., Musen, M. A.
  C S R E A PRESS.2004: 28–32

- **Specifying ontology views by traversal** *3rd International Semantic Web Conference*
  Noy, N. F., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2004: 713–725

- **Tracking changes during ontology evolution** *3rd International Semantic Web Conference*
  Noy, N. F., Kunnatur, S., Klein, M., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2004: 259–273

- **The Protege OWL Plugin: An open development environment for Semantic Web applications** *3rd International Semantic Web Conference*
  Knublauch, H., Fergerson, R. W., Noy, N. F., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2004: 229–243

- **Evaluating provider adherence in a trial of a guideline-based decision support system for hypertension** *11th World Congress on Medical Informatics*
  Chan, A. S., Coleman, R. W., Martins, S. B., Advani, A., Musen, M. A., Bosworth, H. B., Oddone, E. Z., Shlipak, M. G., Hoffman, B. B., Goldstein, M. K.
  I O S PRESS.2004: 125–129
- **An intelligent case-adjustment algorithm for the automated design of population-based quality auditing protocols** *11th World Congress on Medical Informatics*
  Advani, A., Jones, N., Shahar, Y., Goldstein, M., Musen, M. A.
  I O S PRESS.2004: 1003–1007
- **Modeling guidelines for integration into clinical workflow** *11th World Congress on Medical Informatics*
  Tu, S. W., Musen, M. A., Shankar, R., Campbell, J., Hrabak, K., McClay, J., Huff, S. M., Mcclure, R., Parker, C., Rocha, R., ABARBANEL, R., Beard, N., Glasgow, et al
  I O S PRESS.2004: 174–178
- **The SAGE guideline modeling: Motivation and methodology** *Symposium on Computerized Guidelines and Protocols*
  Tu, S. W., Campbell, J., Musen, M. A.
  I O S PRESS.2004: 167–171
- **The PROMPT suite: interactive tools for ontology merging and mapping** *17th National Conference on Artificial Intelligence*
  Noy, N. F., Musen, M. A.
  ACADEMIC PRESS LTD- ELSEVIER SCIENCE LTD.2003: 983–1024
- **Configuring online problem-solving resources with the internet reasoning service** *IEEE INTELLIGENT SYSTEMS*
  Crubezy, M., Musen, M. A., Motta, E., Lu, W. J.
  2003; 18 (2): 34-42
- **The structure of guideline recommendations: a synthesis.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Tu, S. W., Campbell, J., Musen, M. A.
  2003: 679-683
- **Challenges in Medical Informatics. A Discipline Coming of Age.** *Yearbook of medical informatics*
  Musen, M. A., van Bemmel, J. H.
  2003: 209-210
- **UPML: The language and tool support for making the Semantic Web alive** *Seminar on Semantics for the Web*
  Omelayenko, B., Crubezy, M., Fensel, D., Benjamins, R., Wielinga, B., Motta, E., Musen, M., Ding, Y.
  M I T PRESS.2003: 141–170
- **BioSTORM: a system for automated surveillance of diverse data sources.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  O'Connor, M. J., Buckeridge, D. L., Choy, M., Crubezy, M., Pincus, Z., Musen, M. A.
  2003: 1071-?
- **A knowledge-acquisition wizard to encode guidelines.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Shankar, R. D., Tu, S. W., Musen, M. A.
  2003: 1007-?
- **Protégé-2000: an open-source ontology-development and knowledge-acquisition environment.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Noy, N. F., Crubezy, M., Fergerson, R. W., Knublauch, H., Tu, S. W., Vendetti, J., Musen, M. A.
  2003: 953-?
- **Contextualizing heterogeneous data for integration and inference.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Pincus, Z., Musen, M. A.
  2003: 514-518
- **Developing quality indicators and auditing protocols from formal guideline models: knowledge representation and transformations.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*

Advani, A., Goldstein, M., Shahar, Y., Musen, M. A.
2003: 11-15

- **An analytic framework fo space-time aberrancy detection in public health surveillance data.** *AMIA ... Annual Symposium proceedings / AMIA Symposium. AMIA Symposium*
  Buckeridge, D. L., Musen, M. A., Switzer, P., Crubézy, M.
  2003: 120-124
- **The evolution of Protege: an environment for knowledge-based systems development** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Gennari, J. H., Musen, M. A., Fergerson, R. W., Grosso, W. E., Crubezy, M., Eriksson, H., Noy, N. F., Tu, S. W.
  2003; 58 (1): 89-123
- **Patient safety in guideline-based decision support for hypertension management: ATHENA DSS** *Annual Meeting of the American-Medical-Information-Association*
  Goldstein, M. K., Hoffman, B. B., Coleman, R. W., Tu, S. W., Shankar, R. D., O'Connor, M., Martins, S., Advani, A., Musen, M. A.
  B M J PUBLISHING GROUP.2002: S11–S16
- **Medical quality assessment by scoring adherence to guideline intentions** *Annual Meeting of the American-Medical-Information-Association*
  Advani, A., Shahar, Y., Musen, M. A.
  B M J PUBLISHING GROUP.2002: S92–S97
- **Bioterrorism preparedness and response: use of information technologies and decision support systems.** *Evidence report/technology assessment (Summary)*
  Bravata, D. M., McDonald, K., Owens, D. K., Buckeridge, D., Haberland, C., Rydzak, C., Schleinitz, M., Smith, W. M., Szeto, H., Wilkening, D., Musen, M., Duncan, B. W., Nouri, et al
  2002: 1-8
- **Breast cancer on the world wide web: cross sectional survey of quality of information and popularity of websites** *BRITISH MEDICAL JOURNAL*
  Meric, F., Bernstam, E. V., Mirza, N. Q., Hunt, K. K., Ames, F. C., Ross, M. I., Kuerer, H. M., Pollock, R. E., Musen, M. A., Singletary, S. E.
  2002; 324 (7337): 577-581
- **SYNCHRONUS: A reusable software module for temporal integration** *Annual Symposium of the American-Medical-Informatics-Association*
  Das, A. K., Musen, M. A.
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 195–199
- **Challenges for Medical Informatics as an Academic Discipline: Workshop Report.** *Yearbook of medical informatics*
  Musen, M. A., van Bemmel, J. H.
  2002: 194-197
- **A typology for modeling processes in clinical guidelines and protocols** *Annual Symposium of the American-Medical-Informatics-Association*
  Tu, S. W., Johnson, P. D., Musen, M. A.
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 1181–1181
- **Standards-based sharable active guideline environment (SAGE): A project to develop a universal framework for encoding and disseminating electronic clinical practice guidelines** *Annual Symposium of the American-Medical-Informatics-Association*
  Beard, N., Campbell, J. R., Huff, S. M., Leon, M., MANSFIELD, J. G., Mays, E., McClay, J., Mohr, D. N., Musen, M. A., O'Brien, D., Rocha, R. A., Saulovich, A., Scheitel, et al
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 973–973
- **Conceptual heterogeneity complicates automated syndromic surveillance for bioterrorism** *Annual Symposium of the American-Medical-Informatics-Association*
  Graham, J., Buckeridge, D., Choy, M., Musen, M.
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 1030–1030
- **Use of Protege-2000 to encode clinical guidelines** *Annual Symposium of the American-Medical-Informatics-Association*
  Shankar, R. D., Tu, S. W., Musen, M. A.
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 1164–1164
- **Protocol design patterns: Domain-oriented abstractions to support the authoring of computer-executable clinical trials** *Annual Symposium of the American-Medical-Informatics-Association*

Nguyen, J. H., Kahn, M. G., Broverman, C. A., Musen, M. A.
HANLEY & BELFUS INC MED PUBLISHERS.2002: 1114–1114

- **PROMPTDIFF: A fixed-point algorithm for comparing ontology versions** *18th National Conference on Artificial Intelligence/14th Conference on Innovative Applications of Artificial Intelligence*
  Noy, N. E., Musen, M. A.
  M I T PRESS.2002: 744–750
- **Knowledge-based bioterrorism surveillance** *Annual Symposium of the American-Medical-Informatics-Association*
  Buckeridge, D. L., Graham, J., O'Connor, M. J., Choy, M. K., Tu, S. W., Musen, M. A.
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 76–80
- **Medical informatics: Searching for underlying components** *METHODS OF INFORMATION IN MEDICINE*
  Musen, M. A.
  2002; 41 (1): 12-19
- **The chronus II temporal database mediator** *Annual Symposium of the American-Medical-Informatics-Association*
  O'Connor, M. J., Tu, S. W., Musen, M. A.
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 567–571
- **A framework for evidence-adaptive quality assessment that unifies guideline-based and performance-indicator approaches** *Annual Symposium of the American-Medical-Informatics-Association*
  Advani, A., Goldstein, M., Musen, M. A.
  HANLEY & BELFUS INC MED PUBLISHERS.2002: 2–6
- **Creating Semantic Web contents with Protege-2000** *IEEE INTELLIGENT SYSTEMS & THEIR APPLICATIONS*
  Noy, N. F., Sintek, M., Decker, S., Crubezy, M., Fergerson, R. W., Musen, M. A.
  2001; 16 (2): 60-71
- **Building an explanation function for a hypertension decision-support system** *10th World Congress on Medical Informatics (MEDINFO 2001)*
  Shankar, R. D., Martins, S. B., Tu, S. W., Goldstein, M. K., Musen, M. A.
  I O S PRESS.2001: 538–542
- **Patient safety in guideline-based decision support for hypertension management: ATHENA DSS** *Annual Symposium of the American-Medical-Informatics-Association (AMIA 2001)*
  Goldstein, M. K., Hoffman, B. B., Coleman, R. W., Tu, S. W., Shankar, R. D., O'Connor, M., Martins, S., Advani, A., Musen, M. A.
  BMJ PUBLISHING GROUP.2001: 214–218
- **A virtual medical record for guideline-based decision support** *Annual Symposium of the American-Medical-Informatics-Association (AMIA 2001)*
  Johnson, P. D., Tu, S. W., Musen, M. A., Purves, I.
  BMJ PUBLISHING GROUP.2001: 294–298
- **Representation of structural relationships in the Foundational Model of anatomy**
  Mejino, J. L., Noy, N. F., Musen, M. A., Brinkley, J. F., Rosse, C.
  BMJ PUBLISHING GROUP.2001: 973–973
- **A client-server framework for deploying a decision-support system in a resource-constrained environment**
  O'Connor, M. J., Shankar, R. D., Tu, S. W., Advani, A., Goldstein, M. K., Coleman, R. W., Musen, M. A.
  BMJ PUBLISHING GROUP.2001: 986–986
- **Modeling data and knowledge in the EON guideline architecture** *10th World Congress on Medical Informatics (MEDINFO 2001)*
  Tu, S. W., Musen, M. A.
  I O S PRESS.2001: 280–284
- **A formal method to resolve temporal mismatches in clinical databases** *Annual Symposium of the American-Medical-Informatics-Association (AMIA 2001)*
  Das, A. K., Musen, M. A.
  BMJ PUBLISHING GROUP.2001: 130–134
- **Medical quality assessment by scoring adherence to guideline intentions** *Annual Symposium of the American-Medical-Informatics-Association (AMIA 2001)*

Advani, A., Shahar, Y., Musen, M. A.
BMJ PUBLISHING GROUP.2001: 2–6

- **Integration of textual guideline documents with formal guideline knowledge bases** *Annual Symposium of the American-Medical-Informatics-Association (AMIA 2001)*
  Shankar, R. D., Tu, S. W., Martins, S. B., Fagan, L. M., Goldstein, M. K., Musen, M. A.
  BMJ PUBLISHING GROUP.2001: 617–621
- **RASTA: A distributed temporal abstraction system to facilitate knowledge-driven monitoring of clinical databases** *10th World Congress on Medical Informatics (MEDINFO 2001)*
  O'Connor, M. J., Grosso, W. E., Tu, S. W., Musen, M. A.
  I O S PRESS.2001: 508–512
- **Integration and beyond: Linking information from disparate sources and into workflow** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Stead, W. W., MILLER, R. A., Musen, M. A., Hersh, W. R.
  2000; 7 (2): 135-145
- **The impact of displayed awards on the credibility and retention of Web site information** *Annual Symposium of the American-Medical-Informatics-Association*
  Shon, J., Marshall, J., Musen, M. A.
  HANLEY & BELFUS INC.2000: 794–798
- **PROMPT: Algorithm and tool for automated ontology merging and alignment** *17th National Conference on Artificial Intelligence (AAAI-2000)/12th Conference on Innovative Applications of Artificial Intelligence (IAAI-2000)*
  Noy, N. F., Musen, M. A.
  M I T PRESS.2000: 450–455
- **The knowledge model of Protege-2000: Combining interoperability and flexibility** *12th International Conference on Knowledge Engineering and Knowledge Management*
  Noy, N. F., Fergerson, R. W., Musen, M. A.
  SPRINGER-VERLAG BERLIN.2000: 17–32
- **Knowledge representation and tool support for critiquing clinical trial protocols** *Annual Symposium of the American-Medical-Informatics-Association*
  Rubin, D. L., Gennari, J., Musen, M. A.
  HANLEY & BELFUS INC.2000: 724–728
- **A case study in using Protege-2000 as a tool for CommonKADS** *12th International Conference on Knowledge Engineering and Knowledge Management*
  Schreiber, G., Crubezy, M., Musen, M.
  SPRINGER-VERLAG BERLIN.2000: 33–48
- **Explanations for a hypertension decision-support system**
  Shankar, R. D., Tu, S. W., Goldstein, M. K., Musen, M. A.
  HANLEY & BELFUS INC.2000: 1136–1136
- **Representation of temporal indeterminacy in clinical databases** *Annual Symposium of the American-Medical-Informatics-Association*
  O'Connor, M. J., Tu, S. W., Musen, M. A.
  HANLEY & BELFUS INC.2000: 615–619
- **From guideline modeling to guideline execution: Defining guideline-based decision-support services** *Annual Symposium of the American-Medical-Informatics-Association*
  Tu, S. W., Musen, M. A.
  HANLEY & BELFUS INC.2000: 863–867
- **Implementing clinical practice guidelines while taking account of changing evidence: ATHENA DSS, an easily modifiable decision-support system for managing hypertension in primary care** *Annual Symposium of the American-Medical-Informatics-Association*
  Goldstein, M. K., Hoffman, B. B., Coleman, R. W., Musen, M. A., Tu, S. W., Advani, A., Shankar, R., O'Connor, M.
  HANLEY & BELFUS INC.2000: 300–304

- **Ontology acquisition from on-line knowledge sources** *Annual Symposium of the American-Medical-Informatics-Association*
  Li, Q., Shilane, P., Noy, N. F., Musen, M. A.
  HANLEY & BELFUS INC.2000: 497–501
- **Design and use of clinical ontologies: Curricular goals for the education of health-telematics professionals** *2nd European Workshop on Acceptance of Telematics Applications by Healthcare Professionals*
  Musen, M. A.
  I O S PRESS.2000: 40–47
- **Scalable software architectures for decision support** *Grand Challenges Conference on Health Informatics - Challenges to Progress*
  Musen, M. A.
  SCHATTAUER GMBH-VERLAG MEDIZIN NATURWISSENSCHAFTEN.1999: 229–38
- **Semi-automated entry of clinical temporal-abstraction knowledge** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Shahar, Y., Chen, H., Stites, D. P., Basso, L. V., Kaizer, H., Wilson, D. M., Musen, M. A.
  1999; 6 (6): 494-511
- **Use of a domain model to drive an interactive knowledge-editing tool** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Musen, M. A., Fagan, L. M., Combs, D. M., Shortliffe, E. H.
  1999; 51 (2): 479-495
- **Integration of temporal reasoning and temporal-data maintenance into a reusable database mediator to answer abstract, time-oriented queries: The Tzolkin system** *JOURNAL OF INTELLIGENT INFORMATION SYSTEMS*
  Nguyen, J. H., Shahar, Y., Tu, S. W., Das, A. K., Musen, M. A.
  1999; 13 (1-2): 121-145
- **Justification of automated decision-making: Medical explanations as medical arguments** *Annual Symposium of the American-Medical-Informatics-Association*
  Shankar, R. D., Musen, M. A.
  BMJ PUBLISHING GROUP.1999: 395–399
- **Tool support for authoring eligibility criteria for cancer trials** *Annual Symposium of the American-Medical-Informatics-Association*
  Rubin, D. L., Gennari, J. H., Srinivas, S., Yuen, A., Kaizer, H., Musen, M. A., Silva, J. S.
  BMJ PUBLISHING GROUP.1999: 369–373
- **EON 2.0: Enhanced middleware for automation of protocol-directed therapy**
  Musen, M. A., Tu, S. W., Shankar, R. D., O'Connor, M. J., Advani, A.
  BMJ PUBLISHING GROUP.1999: 1215–1215
- **Representing the digital anatomist foundational model as a protege ontology**
  Hahn, J. S., Burnside, E., Brinkley, J. F., Rosse, C., Musen, M. A.
  BMJ PUBLISHING GROUP.1999: 1070–1070
- **Applying temporal joins to clinical databases** *Annual Symposium of the American-Medical-Informatics-Association*
  O'Connor, M. J., Tu, S. W., Musen, M. A.
  BMJ PUBLISHING GROUP.1999: 335–339
- **Representation of change in controlled medical terminologies** *ARTIFICIAL INTELLIGENCE IN MEDICINE*
  Oliver, D. E., Shahar, Y., Shortliffe, E. H., Musen, M. A.
  1999; 15 (1): 53-76
- **Integrating a modern knowledge-based system architecture with a legacy VA database: The ATHENA and EON projects at Stanford** *Annual Symposium of the American-Medical-Informatics-Association*
  Advani, A., Tu, S., O'Connor, M., Coleman, R., Goldstein, M. K., Musen, M.
  BMJ PUBLISHING GROUP.1999: 653–657
- **The low availability of metadata elements for evaluating the quality of medical information on the World Wide Web** *Annual Symposium of the American-Medical-Informatics-Association*
  Shon, J., Musen, M. A.
  BMJ PUBLISHING GROUP.1999: 945–949

- **A flexible approach to guideline modeling** *Annual Symposium of the American-Medical-Informatics-Association*
  Tu, S. W., Musen, M. A.
  BMJ PUBLISHING GROUP.1999: 420–424
- **Domain ontologies in software engineering: Use of protege with the EON architecture** *METHODS OF INFORMATION IN MEDICINE*
  Musen, M. A.
  1998; 37 (4-5): 540-550
- **Reuse, CORBA, and knowledge-based systems** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Gennari, J. H., Cheng, H. N., Altman, R. B., Musen, M. A.
  1998; 49 (4): 523-546
- **Episodic refinement of episodic skeletal-plan refinement** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Tu, S. W., Musen, M. A.
  1998; 48 (4): 475-497
- **A declarative explanation framework that uses a collection of visualization agents** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Shankar, R. D., Tu, S. W., Musen, M. A.
  1998: 602-606
- **VM-in-Protege: A study of software reuse** *9th World Congress on Medical Informatics: Global Health Networking - A Vision for the Next Millennium (MEDINFO 98)*
  Park, J. Y., Musen, M. A.
  I O S PRESS.1998: 644–648
- **Therapy planning as constraint satisfaction: A computer-based antiretroviral therapy advisor for the management of HIV** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Smith, D. S., Park, J. Y., Musen, M. A.
  1998: 627-631
- **Modern architectures for intelligent systems: Reusable ontologies and problem-solving methods** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Musen, M. A.
  1998: 46-52
- **Sequential versus standard neural networks for pattern recognition: An example using the domain of coronary heart disease** *COMPUTERS IN BIOLOGY AND MEDICINE*
  OHNOMACHADO, L., Musen, M. A.
  1997; 27 (4): 267-281
- **A foundational model of time for heterogeneous clinical databases** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Das, A. K., Musen, M. A.
  1997: 106-110
- **EON: CORBA-based middleware for automation of protocol-directed therapy**
  Musen, M. A., Tu, S. W., Advani, A., Das, A. K., Hasan, Z., Nguyen, J., Shahar, Y.
  BMJ PUBLISHING GROUP.1997: 1025–1025
- **A temporal database mediator for protocol-based decision support** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Nguyen, J. H., Shahar, Y., Tu, S. S., Das, A. K., Musen, M. A.
  1997: 298-302
- **Knowledge-based temporal abstraction in clinical domains** *ARTIFICIAL INTELLIGENCE IN MEDICINE*
  Shahar, Y., Musen, M. A.
  1996; 8 (3): 267-298
- **Reusable ontologies, knowledge-acquisition tools, and performance systems: PROTEGE-II solutions to Sisyphus-2** *Knowledge Acquisition Workshop*
  Rothenfluh, T. E., Gennari, J. H., Eriksson, H., Puerta, A. R., Tu, S. W., Musen, M. A.

ACADEMIC PRESS LTD ELSEVIER SCIENCE LTD.1996: 303–32

- **Knowledge acquisition for temporal abstraction.** *Proceedings : a conference of the American Medical Informatics Association / ... AMIA Annual Fall Symposium. AMIA Fall Symposium*
  Stein, A., Musen, M. A., Shahar, Y.
  1996: 204-208
- **The EON model of intervention protocols and guidelines.** *Proceedings : a conference of the American Medical Informatics Association / ... AMIA Annual Fall Symposium. AMIA Fall Symposium*
  Tu, S. W., Musen, M. A.
  1996: 587-591
- **Conceptual and formal specifications of problem-solving methods** *INTERNATIONAL JOURNAL OF EXPERT SYSTEMS*
  Fensel, D., Eriksson, H., Musen, M. A., Studer, R.
  1996; 9 (4): 507-532
- **Making generic guidelines site-specific.** *Proceedings : a conference of the American Medical Informatics Association / ... AMIA Annual Fall Symposium. AMIA Fall Symposium*
  Fridsma, D. B., Gennari, J. H., Musen, M. A.
  1996: 597-601
- **The EON model of intervention protocols and guidelines.** *Proceedings : a conference of the American Medical Informatics Association / ... AMIA Annual Fall Symposium. AMIA Fall Symposium*
  Tu, S. W., Musen, M. A.
  1996: 587-591
- **Task modeling with reusable problem-solving methods** *ARTIFICIAL INTELLIGENCE*
  Eriksson, H., Shahar, Y., Tu, S. W., Puerta, A. R., Musen, M. A.
  1995; 79 (2): 293-326
- **Computer-based screening of patients with HIV/AIDS for clinical-trial eligibility.** *The Online journal of current clinical trials*
  Carlson, R. W., Tu, S. W., Lane, N. M., Lai, T. L., Kemper, C. A., Musen, M. A., Shortliffe, E. H.
  1995; Doc No 179: [3347 words, 32 paragraphs]
- **THE SEPARATION OF REVIEWING KNOWLEDGE FROM MEDICAL KNOWLEDGE** *METHODS OF INFORMATION IN MEDICINE*
  VANDERLEI, J., Musen, M. A.
  1995; 34 (1-2): 131-139
- **The development of a controlled medical terminology: identification, collaboration, and customization.** *Medinfo. MEDINFO*
  Miller, E. T., WIECKERT, K. E., Fagan, L. M., Musen, M. A.
  1995; 8: 148-152
- **A component-based architecture for automation of protocol-directed therapy** *5th Conference on Artificial Intelligence in Medicine Europe (AIME 95)*
  Musen, M. A., Tu, S. W., Das, A. K., Shahar, Y.
  SPRINGER-VERLAG BERLIN.1995: 3–13
- **CALIPER: individualized-growth curves for the monitoring of children's growth.** *Medinfo. MEDINFO*
  Kuilboer, M. M., Wilson, D. M., Musen, M. A., Wit, J. M.
  1995; 8: 1686-?
- **PROTEGE-II: computer support for development of intelligent systems from libraries of components.** *Medinfo. MEDINFO*
  Musen, M. A., Gennari, J. H., Eriksson, H., Tu, S. W., Puerta, A. R.
  1995; 8: 766-770
- **Knowledge-based temporal abstraction in diabetes therapy.** *Medinfo. MEDINFO*
  Shahar, Y., Das, A. K., Tu, S. W., Kraemer, F. B., Basso, L. V., Musen, M. A.
  1995; 8: 852-856
- **A comparison of the temporal expressiveness of three database query methods.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*

Das, A. K., Musen, M. A.
1995: 331-337

- **Hierarchical neural networks for survival analysis.** *Medinfo. MEDINFO*
  Ohno-Machado, L., Walker, M. G., Musen, M. A.
  1995; 8: 828-832

- **A web-based architecture for a medical vocabulary server.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Gennari, J. H., Oliver, D. E., Pratt, W., Rice, J., Musen, M. A.
  1995: 275-279

- **A comparison of two computer-based prognostic systems for AIDS.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Ohno-Machado, L., Musen, M. A.
  1995: 737-741

- **A rational reconstruction of INTERNIST-I using PROTEGE-II.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Musen, M. A., Gennari, J. H., Wong, W. W.
  1995: 289-293

- **GRAPH-GRAMMAR ASSISTANCE FOR AUTOMATED GENERATION OF INFLUENCE DIAGRAMS** *IEEE TRANSACTIONS ON SYSTEMS MAN AND CYBERNETICS*
  EGAR, J. W., Musen, M. A.
  1994; 24 (11): 1625-1642

- **A TEMPORAL QUERY SYSTEM FOR PROTOCOL-DIRECTED DECISION-SUPPORT** *METHODS OF INFORMATION IN MEDICINE*
  Das, A. K., Musen, M. A.
  1994; 33 (4): 358-370

- **GENERATION OF KNOWLEDGE-ACQUISITION TOOLS FROM DOMAIN ONTOLOGIES** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Eriksson, H., Puerta, A. R., Musen, M. A.
  1994; 41 (3): 425-453

- **MAPPING DOMAINS TO METHODS IN SUPPORT OF REUSE** *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER STUDIES*
  Gennari, J. H., Tu, S. W., Rothenfluh, T. E., Musen, M. A.
  1994; 41 (3): 399-424

- **A LOGICAL FOUNDATION FOR REPRESENTATION OF CLINICAL-DATA** *16th Annual Symposium on Computer Applications in Medical Care*
  Campbell, K. E., Das, A. K., Musen, M. A.
  HANLEY & BELFUS INC.1994: 218–32

- **PROTEGE-II - A SUITE FOR TOOLS FOR DEVELOPMENT OF INTELLIGENT SYSTEMS FROM REUSABLE COMPONENTS** *18th Annual Symposium on Computer Applications in Medical Care - Transforming Information, Changing Health Care*
  Musen, M. A., Eriksson, H., Gennari, J. H., Tu, S. W., Puerta, A. R.
  BMJ PUBLISHING GROUP.1994: 1065–1065

- **MODEL-BASED AUTOMATED GENERATION OF USER INTERFACES** *12th National Conference on Artificial Intelligence*
  Puerta, A. R., Eriksson, H., Gennari, J. H., Musen, M. A.
  MIT PRESS.1994: 471–477

- **HIERARCHICAL NEURAL NETWORKS FOR PARTIAL DIAGNOSIS IN MEDICINE** *1994 International-Neural-Network-Society Annual Meeting - World Congress on Neural Networks-San Diego*
  OHNOMACHADO, L., Musen, M. A.
  LAWRENCE ERLBAUM ASSOC PUBL.1994: A291–A296

- **BEYOND DATA MODELS FOR AUTOMATED USER INTERFACE GENERATION** *1994 Conference of the British HCI Group - People and Computers IX (HCI 94)*
  Puerta, A. R., Eriksson, H., Gennari, J. H., Musen, M. A.

CAMBRIDGE UNIV PRESS.1994: 353–366

- **A computer-based approach to quality improvement for telephone triage in a community AIDS clinic.** *Nursing administration quarterly*
  Henry, S. B., Borchelt, D., SCHREINER, J. G., Musen, M. A.
  1994; 18 (2): 65-73

- **PATIENT-CARE APPLICATIONS ON INTERNET** *18th Annual Symposium on Computer Applications in Medical Care - Transforming Information, Changing Health Care*
  Barnett, O., SHORTLIFFE, E., Chueh, H., PIGGINS, J., Greenes, R., Cimino, J., Musen, M., Clayton, P., Humphreys, B., KINGSLAND, L.
  BMJ PUBLISHING GROUP.1994: 1060–1060

- **KNOWLEDGE-BASED TEMPORAL ABSTRACTION FOR DIABETIC MONITORING** *18th Annual Symposium on Computer Applications in Medical Care - Transforming Information, Changing Health Care*
  Shahar, Y., Das, A. K., Tu, S. W., Kraemer, F. B., Musen, M. A.
  BMJ PUBLISHING GROUP.1994: 697–701

- **A TEMPORAL-ABSTRACTION MEDIATOR FOR PROTOCOL-BASED DECISION-SUPPORT SYSTEMS** *18th Annual Symposium on Computer Applications in Medical Care - Transforming Information, Changing Health Care*
  Das, A. K., Shahar, Y., Tu, S. W., Musen, M. A.
  BMJ PUBLISHING GROUP.1994: 320–324

- **A METHODOLOGY FOR DETERMINING PATIENTS ELIGIBILITY FOR CLINICAL-TRIALS** *METHODS OF INFORMATION IN MEDICINE*
  Tu, S. W., Kemper, C. A., Lane, N. M., Carlson, R. W., Musen, M. A.
  1993; 32 (4): 317-325

- **RESUME - A TEMPORAL-ABSTRACTION SYSTEM FOR PATIENT MONITORING** *16TH SYMP ON COMPUTER APPLICATIONS IN MEDICAL CARE*
  Shahar, Y., Musen, M. A.
  ACADEMIC PRESS INC ELSEVIER SCIENCE.1993: 255–73

- **METATOOLS FOR KNOWLEDGE ACQUISITION** *IEEE SOFTWARE*
  Eriksson, H., Musen, M.
  1993; 10 (3): 23-29

- **RESPONSE OF GENERAL-PRACTITIONERS TO COMPUTER-GENERATED CRITIQUES OF HYPERTENSION THERAPY** *METHODS OF INFORMATION IN MEDICINE*
  VANDERLEI, J., VANDERDOES, E., INTVELD, A. J., Musen, M. A., VANBEMMEL, J. H.
  1993; 32 (2): 146-153

- **AIDS2: a decision-support tool for decreasing physicians' uncertainty regarding patient eligibility for HIV treatment protocols.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Ohno-Machado, L., Parra, E., Henry, S. B., Tu, S. W., Musen, M. A.
  1993: 429-433

- **A NEEDS ANALYSIS FOR COMPUTER-BASED TELEPHONE TRIAGE IN A COMMUNITY AIDS CLINIC** *16th Annual Symposium on Computer Applications in Medical Care*
  Henry, S. B., SCHREINER, J. G., Borchelt, D., Musen, M. A.
  MCGRAW-HILL BOOK CO.1993: 59–63

- **GRAPH-GRAMMAR PRODUCTIONS FOR THE MODELING OF MEDICAL DILEMMAS** *16th Annual Symposium on Computer Applications in Medical Care*
  EGAR, J. W., Musen, M. A.
  MCGRAW-HILL BOOK CO.1993: 349–353

- **T-HELPER - AUTOMATED SUPPORT FOR COMMUNITY-BASED CLINICAL RESEARCH** *16th Annual Symposium on Computer Applications in Medical Care*
  Musen, M. A., Carlson, R. W., Fagan, L. M., Deresinski, S. C., Shortliffe, E. H.
  MCGRAW-HILL BOOK CO.1993: 719–723

- **PROBLEM-SOLVING MODELS FOR GENERATION OF TASK-SPECIFIC KNOWLEDGE-ACQUISITION TOOLS** *IFIP TC12 Workshop on Artificial Intelligence from the Information Processing Perspective (AIFIPP 92)*

Musen, M. A., Tu, S. W.
ELSEVIER SCIENCE PUBL B V.1993: 23–49

- **MODELING TASKS WITH MECHANISMS** *INTERNATIONAL JOURNAL OF INTELLIGENT SYSTEMS*
  Puerta, A. R., Tu, S. W., Musen, M. A.
  1993; 8 (1): 129-152

- **Knowledge reuse: temporal-abstraction mechanisms for the assessment of children's growth.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Kuilboer, M. M., Shahar, Y., Wilson, D. M., Musen, M. A.
  1993: 449-453

- **Automated modeling of medical decisions.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  EGAR, J. W., Musen, M. A.
  1993: 424-428

- **A computer-based tool for generation of progress notes.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Campbell, K. E., WIECKERT, K., Fagan, L. M., Musen, M. A.
  1993: 284-288

- **An extended SQL for temporal data management in clinical decision-support systems.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Das, A. K., Tu, S. W., Purcell, G. P., Musen, M. A.
  1992: 128-132

- **CONCEPTUAL MODELS FOR AUTOMATIC-GENERATION OF KNOWLEDGE-ACQUISITION TOOLS** *LECTURE NOTES IN ARTIFICIAL INTELLIGENCE*
  Eriksson, H., Musen, M. A.
  1992; 599: 14-36

- **CONCEPTUAL MODELS FOR AUTOMATIC-GENERATION OF KNOWLEDGE-ACQUISITION TOOLS** *6TH EUROPEAN KNOWLEDGE ACQUISITION WORKSHOP : CURRENT DEVELOPMENT IN KNOWLEDGE ACQUISITION (EKAW 92)*
  Eriksson, H., Musen, M. A.
  SPRINGER-VERLAG BERLIN.1992: 14–36

- **Graph-grammar productions for the modeling of medical dilemmas.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  EGAR, J. W., Musen, M. A.
  1992: 349-353

- **Representation of clinical data using SNOMED III and conceptual graphs.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Campbell, K. E., Musen, M. A.
  1992: 354-358

- **A temporal-abstraction system for patient monitoring.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Shahar, Y., Musen, M. A.
  1992: 121-127

- **A needs analysis for computer-based telephone triage in a community AIDS clinic.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Henry, S. B., SCHREINER, J. G., Borchelt, D., Musen, M. A.
  1992: 59-63

- **T-HELPER: automated support for community-based clinical research.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Musen, M. A., Carlson, R. W., Fagan, L. M., Deresinski, S. C., Shortliffe, E. H.
  1992: 719-723

- **COMPARISON OF COMPUTER-AIDED AND HUMAN REVIEW OF GENERAL-PRACTITIONERS MANAGEMENT OF HYPERTENSION** *LANCET*
  VANDERLEI, J., Musen, M. A., VANDERDOES, E., INTVELD, A. J., VANBEMMEL, J. H.
  1991; 338 (8781): 1504-1508
- **A MODEL FOR CRITIQUING BASED ON AUTOMATED MEDICAL RECORDS** *COMPUTERS AND BIOMEDICAL RESEARCH*
  VANDERLEI, J., Musen, M. A.
  1991; 24 (4): 344-378
- **Temporal-abstraction mechanisms in management of clinical protocols.** *Proceedings / the ... Annual Symposium on Computer Application [sic] in Medical Care. Symposium on Computer Applications in Medical Care*
  Shahar, Y., Tu, S. W., Musen, M. A.
  1991: 629-633
- **EPISODIC SKELETAL-PLAN REFINEMENT BASED ON TEMPORAL DATA** *COMMUNICATIONS OF THE ACM*
  Tu, S. W., Kahn, M. G., Musen, M. A., Ferguson, J. C., Shortliffe, E. H., Fagan, L. M.
  1989; 32 (12): 1439-1455
- **AN EDITOR FOR THE CONCEPTUAL MODELS OF INTERACTIVE KNOWLEDGE-ACQUISITION TOOLS** *INTERNATIONAL JOURNAL OF MAN-MACHINE STUDIES*
  Musen, M. A.
  1989; 31 (6): 673-698
- **KNOWLEDGE ENGINEERING FOR CLINICAL CONSULTATION PROGRAMS - MODELING THE APPLICATION AREA** *METHODS OF INFORMATION IN MEDICINE*
  Musen, M. A., VANDERLEI, J.
  1989; 28 (1): 28-35
- **GRAPHICAL ACCESS TO MEDICAL EXPERT SYSTEMS .3. DESIGN OF A KNOWLEDGE ACQUISITION ENVIRONMENT** *METHODS OF INFORMATION IN MEDICINE*
  Walton, J. D., Musen, M. A., Combs, D. M., Lane, C. D., Shortliffe, E. H., Fagan, L. M.
  1987; 26 (3): 78-88
- **KNOWLEDGE ENGINEERING FOR A CLINICAL-TRIAL ADVICE SYSTEM - UNCOVERING ERRORS IN PROTOCOL SPECIFICATION (REPRINTED FROM PROCEEDING, OF THE AAAMSI CONGRESS 86, MAY PG 24-27, 1986)** *BULLETIN DU CANCER*
  Musen, M. A., ROHN, J. A., Fagan, L. M., Shortliffe, E. H.
  1987; 74 (3): 291-296
- **USE OF A DOMAIN MODEL TO DRIVE AN INTERACTIVE KNOWLEDGE-EDITING TOOL** *INTERNATIONAL JOURNAL OF MAN-MACHINE STUDIES*
  Musen, M. A., Fagan, L. M., Combs, D. M., Shortliffe, E. H.
  1987; 26 (1): 105-121
- **PhLeGrA: Graph Analytics in Pharmacology over the Web of Life Sciences Linked Open Data** *International Conference on World Wide Web*
  Kamdar, M. R., Musen, M.
  2017: 321–29
- **BiOnIC: A Catalog of User Interactions with Biomedical Ontologies** *International Semantic Web Conference*
  Kamdar, M. R., Walk, S., Tudorache, T., Musen, M. A.
  2017: 130–38