



# Preparing Nursing Leaders in Health Informatics In an Era of Big Data

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UNIVERSITY OF MINNESOTA  
School of Nursing

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## Faculty Introduction

- Karen A. Monsen, PhD, RN, FAMIA, FAAN, University of Minnesota
  - Associate Professor, School of Nursing
  - Specialty coordinator, DNP Nursing Informatics
  - Director, Center for Nursing Informatics
  - Affiliate Faculty, Institute for Health Informatics
  - Faculty, Center for Spirituality and Healing
  - Faculty, Data Science Program, Computer Science and Engineering
  - Director, Omaha System Partnership

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## Learning Lab in Five Parts

- I. Intro: Who What When Where & Why
- II. Leadership Essentials
- III. Competing Values Framework
- IV. Minnesota Nursing Informatics Leadership inventory
- V. Leadership in Action

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## Part I Learning Objectives

- Analyze pedagogy for nursing informatics leadership opportunities to understand how you may develop your skills, networks, and connections for future roles.
- Describe a scenario in which a nursing informatics leader may influence an organization to gain appreciation of multiple factors present in any nursing informatics leadership context.

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## Goal: Grow Leadership Skills

- Further education
- More connections
- Apply skills



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# Informatics Skills

- Use technology for knowledge management in nursing and healthcare



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# Who

- Pioneers
- Today's leaders
- You!



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## What

- Align people, process, and purpose in service to a greater good
- Tailor leadership skills



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## When

- Now, and in the future!



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## Where

- Organizations
  - Health systems
  - Professional organizations
  - Governmental committees and boards
  - Industry (software companies)
  - Academic and educational settings
  - Informal and formal networks



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## Why

- Leadership Aims to Serve the Greater Good
  - Influence policy
  - Influence practice
  - Achieve goals
    - Quality
    - Safety
    - Improve population health
    - New knowledge
  - Advance the discipline
  - Educate new leaders



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## Discussion

- Describe a future nursing informatics leadership scenario in which you will use your leadership skills to achieve important outcomes (Who, What, When, Where, Why).

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## References

- Kurzweil R. (2001). The Law of Accelerating Returns. Available at: <http://www.kurzweilai.net/the-law-of-accelerating-returns>
- Cooper, A., & Hamer, S. (2012). Strategic leadership skills for nursing informatics. *Nursing times*, 108(20), 25-26. Available at: <https://www.nursingtimes.net/roles/nurse-educators/strategic-leadership-skills-for-nursing-informatics/5044764.article>
- Kirby, S. B. (2015). Informatics leadership: The role of the CNIO. *Nursing2018*, 45(4), 21-22. Available at: [https://journals.lww.com/nursing/fulltext/2015/04000/Informatics\\_leadership\\_The\\_role\\_of\\_the\\_CNIO.8.aspx](https://journals.lww.com/nursing/fulltext/2015/04000/Informatics_leadership_The_role_of_the_CNIO.8.aspx)
- American Organization of Nurse Executives. (2012). Position paper: Nursing informatics executive leader. *Washington, DC: Author*. Available at: <http://www.aone.org/resources/informatics-executive-leader.pdf>
- Parker, C. D. (2014). Nursing informatics leadership: Helping craft the profession's future. *Nursing2018*, 44(12), 23-24. Available at: [https://journals.lww.com/nursing/fulltext/2014/12000/Nursing\\_informatics\\_leadership\\_Helping\\_craft\\_the.9.aspx](https://journals.lww.com/nursing/fulltext/2014/12000/Nursing_informatics_leadership_Helping_craft_the.9.aspx)
- Environmental scanning as information seeking and organizational learning <http://www.informationr.net/ir/7-1/paper112.html>

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## II. Leadership Essentials

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### Part II Learning Objectives

- Understand leadership essentials to apply them across nursing informatics leadership scenarios.
- Describe clarification of a shared purpose as a unifying concept to gain appreciation for the role of nursing informatics leaders in achieving motivation and direction toward optimizing organizational outcomes.

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# Leadership Essentials

- Know Yourself
- Align People-Process-Purpose
- Manage Competing Values



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# Know Yourself



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## Align People-Process-Purpose



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## People

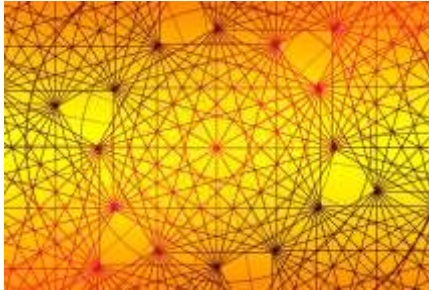
- Relationships facilitate change
  - Mentor and be mentored
  - Collaborate and network
  - Connect people and resources



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## Process

- Understand the context
  - Current state
  - Desired state
  - The gap between the current and desired state
  - Culture of the system or organization



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## Purpose

- State the purpose
  - Reach shared understanding of the goal



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## Discussion

- Describe people, process and purpose in your nursing informatics leadership scenario. How do your own values align with the leadership needs of this scenario?

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## References

- Bennis, W. G., & Townsend, R. (1989). *On becoming a leader* (Vol. 36). Reading, MA: Addison-Wesley.  
<http://housleyprogram.org/s/On-Becoming-a-Leader-Summary-yppl.pdf>
- Sample Organizational Culture Assessment Questions to Define Core Culture <https://sheilamargolis.com/consulting/organizational-culture-change-initiatives/organizational-culture-assessment-questions/>
- Conduct a culture assessment  
<https://sheilamargolis.com/2016/06/20/conduct-culture-assessment/>
- The Organizational SCAN: A Periodic Table for Organizational Change <https://www.bptrends.com/publicationfiles/FOUR%2004-08-ART-TheOrganizational%20SCAN-Tosti-V.1.pdf>
- 8 Principles of Purpose Driven Leadership. Available at: <https://www.success.com/8-principles-of-purpose-driven-leadership/>

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## III. The Competing Values Framework

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### Part III Learning Objectives

- Describe the four leadership cultures and 12 leadership skills to gain appreciation of the interaction between flexibility and control and internal vs. external focus within an organization.
- Understand the four ways in which leadership cultures promote organizational change to discern alignment of different approaches with desired purpose for optional outcomes.
- Discuss which culture or cultures and leadership skills will be needed in a given scenario to improve tailoring of leadership skills.

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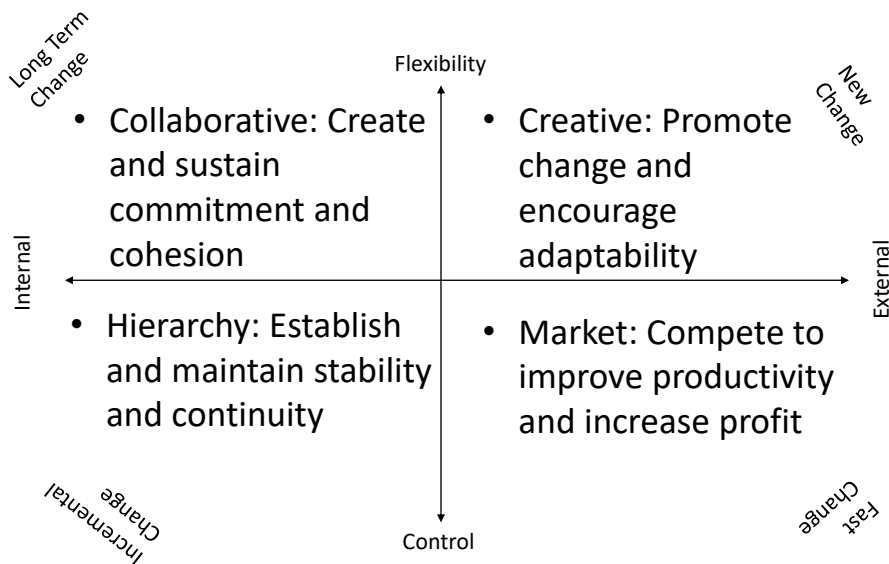
# Competing Values

- Flexibility vs. Control
- Internal vs. External



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# Competing Values Framework



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## Leadership Cultures in Nursing Informatics



Collaborative



Creative



Hierarchy



Market

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## Leadership Skills by Culture

### **Collaborative**

- Facilitator: I convene and connect people to address issues and create solutions
- Mentor: I guide and support others
- Team builder: I foster interpersonal dynamics within groups

### **Creative**

- Innovator: I create novel ideas and solutions
- Entrepreneur: I advocate for my novel ideas and solutions
- Visionary: I envision ideas and solutions for the future

### **Hierarchy**

- Coordinator: I connect people and resources to ensure success
- Monitor: I keep track of progress
- Organizer: I obtain and manage resources

### **Market**

- Hard driver: I set and achieve high stakes goals and standards
- Competitor: I work to be recognized as the best
- Producer: I fulfill expectations quickly

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## Facilitator

- I convene and connect people to address issues and create solutions
  - Lead open discussion
  - Understand key differences
  - Work participatively to resolve them



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## Mentor

- I guide and support others
  - Seek to understand others' perspectives
  - Treat others in a caring way



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## Team builder

- I foster interpersonal dynamics within groups
  - Develop group norms
  - Foster a sense of unity
  - Engage others in active decision making



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## Innovator

- I create novel ideas and solutions
  - Search for innovations and potential improvements
  - Experiment with new concepts and procedures
  - Be inventive



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# Entrepreneur

- I advocate for my novel ideas and solutions
  - Engage others by telling stories
  - Give points of comparison
  - Potential opportunity (gain/loss)



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# Visionary

- I envision ideas and solutions for the future
  - scan the environment
  - pay attention to trends
  - discern consequences of trends



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## Coordinator

- I connect people and resources to ensure success
  - Manage logistics
  - Optimize workflows
  - Strive for clarity



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## Monitor

- I keep track of progress
  - Keep excellent records
  - Practice data-driven decision making
  - Monitor compliance



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## Organizer

- I obtain and manage resources
  - Maintain excellence in organization at all levels
  - Use procedures to guide resource management
  - Enforce procedures to prevent and address errors



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## Hard driver

- I set and achieve high stakes goals and standards
  - Focus on immediate results and short term outcomes
  - Emphasize speed
  - Improve technical capacity



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## Competitor

- I work to be recognized as the best
  - Plan ahead and manage contingencies
  - Practice self-discipline
  - Tenacity and persistence



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## Producer

- I fulfill expectations quickly
  - Clarify the need to achieve goals
  - Emphasize adherence to timelines
  - Maintain a results orientation



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## Synthesis

- Nursing Informatics Leaders apply different leadership skills as needed based on the scenario and alignment of people, process and purpose to achieve optimal outcomes.



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## Discussion

- In your scenario, what culture or cultures and leadership skills do you anticipate will be needed to achieve your purpose? Which leadership skills will be natural to you, and which will you need to develop further?

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## References

- Competing Values Framework  
[http://www.thercfgroup.com/files/resources/an\\_introduction\\_to\\_the\\_competing\\_values\\_framework.pdf](http://www.thercfgroup.com/files/resources/an_introduction_to_the_competing_values_framework.pdf)

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## IV. The Minnesota Nursing Informatics Leadership Inventory

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## Part IV Learning Objectives

- Describe the Minnesota Nursing Informatics Leadership Inventory to understand its structure and intended purpose
- Analyze nursing informatics scenarios in relationship to the competing values framework leadership cultures and skills to gain appreciation for using them differently depending on the scenario
- Complete the MNILI to gain self knowledge of your nursing informatics leadership skills and how you would apply them across four scenarios

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## Minnesota Nursing Informatics Leadership Inventory™

- Nursing Informatics Leaders need many skills to succeed in organizational leadership roles
- They need to apply them differently in various contexts and settings



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## MNILI™ Structure

- Competing Values Framework
  - 12 questions
- Leadership styles (Lewin)
  - 3 questions
- Leadership satisfaction
  - 1 question
- 5 point scale
  - ‘Not like me’ to ‘Very much like me’



Collaborative



Creative



Hierarchy



Market

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## Your Participation is a Win-Win Contribution

- Enables leaders to consider a repertoire of skills that may be used differently to optimize results, thus improving outcomes
  - Gain self-knowledge and create development plan
- Data generated from MNILI may reveal patterns in nursing informatics leadership, and inform future nursing informatics leadership discourse



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## Scenario 1

- You are leading a professional healthcare informatics group or organization, and you recognize an innovative opportunity to create a positive development as a leader in the field. You employ your nursing values, vision, and leadership skills and use your influence to seize the opportunity to champion, fuel, and foster the idea toward its rapid development.



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## Scenario 2

- You are leading nursing informatics within a healthcare organization, and you realize that the nurses are at risk of burn out because of the overwhelming demands of new technology. The organization is experiencing high turnover rates and errors that result in patient injuries and lost revenue. You work with fellow leaders, using your data-based planning and decision making skills to measure and monitor quality and efficiency, stabilize staffing, and improve safety and compliance.



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## Scenario 3

- You are leading nursing informatics within a healthcare organization, and you realize that the nursing informatics agenda is not visible or not well understood at the organizational level. You employ your collaborative leadership skills to facilitate nursing involvement in informatics decisions at all levels, mentoring and developing nurses and other members of the healthcare team to ensure that nursing and other professional voices recognized as integral across the organization.



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## Scenario 4

- You are the chief nursing informatics officer for a proprietary electronic health record software company. You charge your team with designing a new utility that supports rapid, transparent, and effective communication across all disciplines; to ensure that nursing and interprofessional documentation options are explicitly patient-centered and visible to all clinicians. Your goal is to establish your software as industry leader with this utility.



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## Global View

- Individual differences by participant and scenario
- Commonalities across nursing informatics leaders



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## Complete your MNILI™

- <http://ahc-leadership-prd.oit.umn.edu/>

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## Discussion

- Summarize your insights about your preferred leadership behaviors and your flexibility across leadership cultures and scenarios. How do these compare with other nursing informatics leader responses?

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## References

- LeKurt Lewin's Leadership Styles  
<http://www.cldc.indiana.edu/docs/snapshots/Leadership%20Styles.pdf>
- Cameron, K. S., & Quinn, R. E. (2011). Diagnosing and changing organizational culture: Based on the competing values framework. John Wiley & Sons.

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## V. Nursing Informatics Leadership in Action: Opportunities to Serve

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### Module 5 Learning Objectives

- Describe opportunities to serve as a nursing informatics leader in formal professional, governmental, or health system organizations to begin planning your next steps in nursing informatics leadership.
- Describe which leadership skills best promote connecting with others and how you might deepen those skills to engage in nursing informatics networks and communities.

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## Join a Nursing Informatics Organization

### Membership Opportunities

- International Medical Informatics Association
- American Nursing Informatics Association
- American Medical Informatics Association
- NANDA-I
- Taiwan Nursing Informatics Association

### No Cost Membership Opportunities

- Omaha System Community
- LOINC Nursing Subcommittee
- Health Informatics New Zealand (free for students)
- Nursing Informatics in Europe Network on Facebook

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## International Medical Informatics Association-Nursing Informatics

- The focus of IMIA-NI is to foster collaboration among nurses and others who are interested in Nursing Informatics to facilitate development in the field.
- We aim to share knowledge, experience and ideas with nurses and healthcare providers worldwide about the practice of Nursing Informatics and the benefits of enhanced information management.



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## American Nursing Informatics Association

- **ANIA Mission:** To advance nursing informatics through education, research, and practice in all roles and settings.
- **ANIA Vision:** To be the organization of choice to advance nursing informatics.
- Membership is open to nurses and other professionals interested in informatics nursing. Corporations and individual corporate representatives are also welcomed as members.



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## American Medical Informatics Association Nursing Informatics Work Group

- I am an AMIA member because the Nursing Informatics Working Group (NIWG) provides me the opportunity to learn from, and network with, nursing informatics leaders from across the country and world. We come together as a community with annual objectives to support nurses and the greater AMIA membership. Our goal is to encourage greater NIWG participation in AMIA while mentoring NIWG members throughout their informatics career.
- Please join the community that understands who you are and what you do. By working together, we make a difference in our profession. — Denise M. Goldsmith, MS, MPH, RN, FAAN, 2017 Chair, NIWG



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# NANDA-I



- Our Purpose: Implementation of nursing diagnosis enhances every aspect of nursing practice, from garnering professional respect to assuring consistent documentation representing nurses' professional clinical judgment, and accurate documentation to enable reimbursement. NANDA International exists to develop, refine and promote terminology that accurately reflects nurses' clinical judgments.
- Our Vision: NANDA International will be a global force for the development and use of nursing's standardized terminology to ensure patient safety through evidence-based care, thereby improving the health care of all people.
- Our Mission: To facilitate the development, refinement, dissemination and use of standardized nursing diagnostic terminology.

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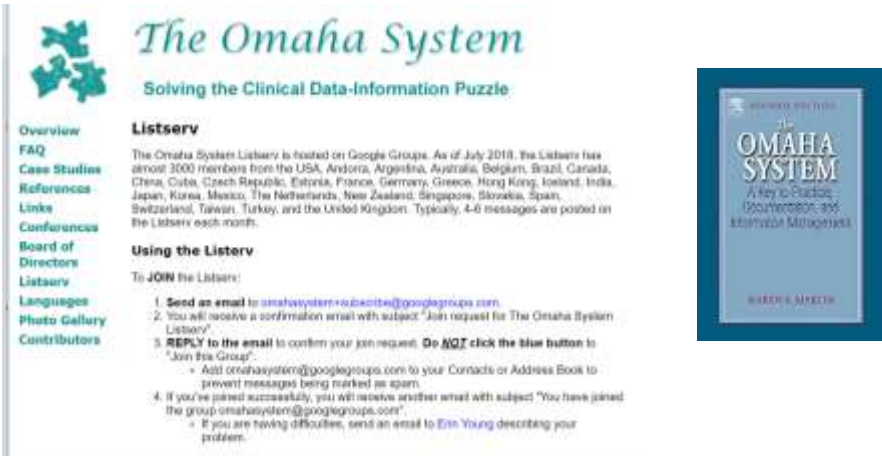
# Taiwan Nursing Informatics Association



A screenshot of the website for the Taiwan Nursing Informatics Association. The page has a blue header with a 'MENU' button and a '會員登入' (Member Login) button. The main content area is divided into two columns. The left column contains a list of menu items: 最新動態, 學會簡介, 學術活動, 會員專區, 活動花絮, 站站通訊, 謝費資訊, 文件下載, 國際護理資訊. The right column contains a 'Latest news...' section with a table of recent news items, including 'Nursing Information Practice Training APP Workshop', 'Nursing information seminar', 'Welcome to apply for "Preliminary Information Care Professional Certification" Announcement', 'First-level information nursing teacher training course - Zhongr...', 'Innovative Medical Information Technology and System Application Seminar', '107 North District Member Study and Exchange Association', and 'Nursing Information Development Practice Training Workshop'. There are also buttons for '護理人員 繼續教育積分查詢' and 'HOT! 歡迎選購'.

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# Omaha System Community




The Omaha System  
Solving the Clinical Data-Information Puzzle

**Overview**  
FAQ  
Case Studies  
References  
Links  
Conferences  
Board of Directors  
Listserv  
Languages  
Photo Gallery  
Contributors

**Listserv**  
The Omaha System Listserv is hosted on Google Groups. As of July 2018, the Listserv has almost 3000 members from the USA, Andorra, Argentina, Australia, Belgium, Brazil, Canada, China, Cuba, Czech Republic, Estonia, France, Germany, Greece, Hong Kong, Iceland, India, Japan, Korea, Mexico, The Netherlands, New Zealand, Singapore, Slovakia, Spain, Switzerland, Taiwan, Turkey, and the United Kingdom. Typically, 4-6 messages are posted on the Listserv each month.

**Using the Listserv**  
To JOIN the Listserv:  
1. Send an email to [omahasystem+subscribe@googlegroups.com](mailto:omahasystem+subscribe@googlegroups.com).  
2. You will receive a confirmation email with subject "Join request for The Omaha System Listserv".  
3. REPLY to the email to confirm your join request. Do NOT click the blue button to "Join this Group".  
    • Add [omahasystem@googlegroups.com](mailto:omahasystem@googlegroups.com) to your Contacts or Address Book to prevent messages being marked as spam.  
4. If you've joined successfully, you will receive another email with subject "You have joined the group omahasystem@googlegroups.com".  
    • If you are having difficulties, send an email to [Erin Young](mailto:Erin.Young@regenstein.com) describing your problem.



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# LOINC Nursing Subcommittee

- **Purpose** To facilitate the development and use of LOINC codes for observations used during key stages of the nursing process, including assessments, goals, and outcomes. Also, to meet the needs for administrative, research, and quality measurement initiatives related to nursing care.

**LOINC**<sup>®</sup>  
From Regenstrief

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## Health Informatics New Zealand & National Nursing Informatics Conference

- Expand your digital health knowledge. Improve your career opportunities. Extend your professional networks. Actively support the growth of digital health in NZ.
- If you are a student you can join HiNZ for free! (To be eligible you must be enrolled in more than one paper and not in full time employment.)



New Zealand's meeting place for digital health

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## Nursing Informatics in Europe Network on Facebook

- To support nurses and nursing organizations in the European countries with information and contacts in the field of informatics.
- To offer nurses opportunities to build contact networks within the informatics field. This could be accomplished by arranging sessions, workshops and tutorials in connection with the Medical Informatics European (MIE) conferences or by arranging separate meetings.
- To support the education of nurses with respect to informatics and computing.
- To support research and developmental work in the field and promote publishing of achieved results.



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## Seek to Serve

- Identify leadership opportunities within professional organizations
  - Join a committee or workgroup
  - Submit your name as a candidate for office



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## Discussion

- Share your nursing informatics organization stories and journey. What organizations will you join next, and how will you serve?

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## References

- Health Informatics New Zealand <https://www.hinz.org.nz/page/JOINHINZ>
- American Nursing Informatics Association <https://www.ania.org/membership>
- The Omaha System List Serv <http://www.omahasystem.org/listserv.html>
- LOINC Nursing Subcommittee <https://loinc.org/committee/nursing/>
- International Medication Informatics Association <https://imia-medinfo.org/wp/sig-ni-nursing-informatics/>
- American Medical Informatics Association <https://www.amia.org/amia-membership>
- North American Nursing Diagnosis Association International <http://www.nanda.org.php7-34.lan3-1.websitetestlink.com/membership/>
- Taiwan Nursing Informatics Association <http://www.ni.org.tw/>
- European Federation for Medical Informatics – Nursing Informatics Working Group <https://www.efmi.org/workinggroups/nursie-nursing-informatics-in-europe>

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## Nursing Informatics Leadership Specialization – UMN-Coursera

- The University of Minnesota School of Nursing in partnership with Coursera is offering a new series of online professional development courses, the Nursing Informatics Leadership specialization.
- Advance your Nursing Informatics Leadership Skills to achieve optimal outcomes across healthcare settings. Complete the set of courses and receive a certificate of completion. Financial aid is available.
- <https://www.coursera.org/specializations/leadership-nursing-informatics>

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