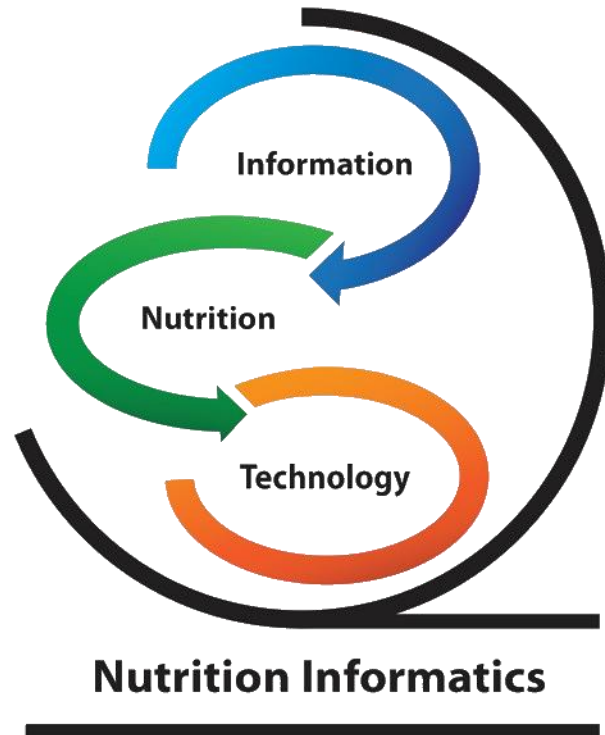# Harnessing your inner NIRD: moving your career forward with nutrition informatics

Sarah Rusnak, MS, RD, LD

Nutrition Informatics

Nutrition Informatics

"The intersection of information, nutrition, and technology."

Nutrition Informatics Committee, 2010

You're already using informatics:

You have accessed the EAL

You complete your PDP online

You are tweeting about this presentation

You use email to communicate

You enter patient data into an EHR

You have used ANDHII

You registered for this conference online

Computer skill vs. Informatics skill

Computer skill is the ability to use a computer effectively to do your job

Informatics is the big picture view- how you collect and use the information critical to your performance

Computer skill

Ability to open and view a spreadsheet

ID	Vegetables	Legumes	Fruit	Nut	Whole Grains	R&P Meat	Fish	M:S Fat	Ethanol	Total
00020175	1	0	0	0	0	0	0	1	0	2
00020177	0	0	1	1	1	1	0	1	0	5
00020178	0	1	0	0	0	0	1	0	0	2
00020179	1	1	1	0	1	0	1	1	0	6
00020180	1	0	0	0	1	1	1	0	0	4
00020181	1	1	0	0	1	1	0	1	0	5
00020182	0	0	1	1	1	0	1	0	0	4
00020228	0	0	0	1	0	0	0	1	0	2
00020229	0	0	0	0	1	1	0	1	0	3
00020230	0	0	1	1	0	1	1	0	0	4
00020231	1	0	0	0	1	0	1	0	0	3
00020232	1	1	0	1	1	0	0	1	1	6
00020233	0	0	0	0	0	1	1	0	0	2
00020234	0	0	0	0	1	1	0	0	0	2
00020235	1	1	1	0	1	0	1	1	0	6
00020236	1	1	0	1	1	1	1	1	1	8
00020237	0	1	0	1	1	1	1	0	0	5
00020238	0	0	0	0	0	1	0	0	0	1

Informatics skill

Ability to understand where the data comes from and what it represents

	G	H	I	J	K
	='aMED Calculations'!(	='aMED Calculations'!	='aMED Calculations'!I1	='aMED Calculations'!	Total
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I2>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B2:J2)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I3>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B3:J3)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I4>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B4:J4)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I5>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B5:J5)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I6>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B6:J6)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I7>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B7:J7)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I8>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B8:J8)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I9>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B9:J9)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I10>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B10:J10)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I11>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B11:J11)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I12>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B12:J12)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I13>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B13:J13)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I14>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B14:J14)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I15>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B15:J15)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I16>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B16:J16)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I17>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B17:J17)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I18>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B18:J18)
	=IF('aMED Calculation:	=IF('aMED Calculatio	=IF('aMED Calculations'!I19>'aMED Calculations'!S$2, 1,0)	=IF('aMED Calculatio	=SUM(B19:J19)

Technology does not replace the dietitian

$$(\; \text{🧠} \; + \; \text{🖥️} \; > \; \text{🧠} \;)$$

- Humans plus technology can more efficiently create knowledge
  - Friedman, CP J Am Med Inform Assoc. 2009 Mar-Apr;16(2):169-70.
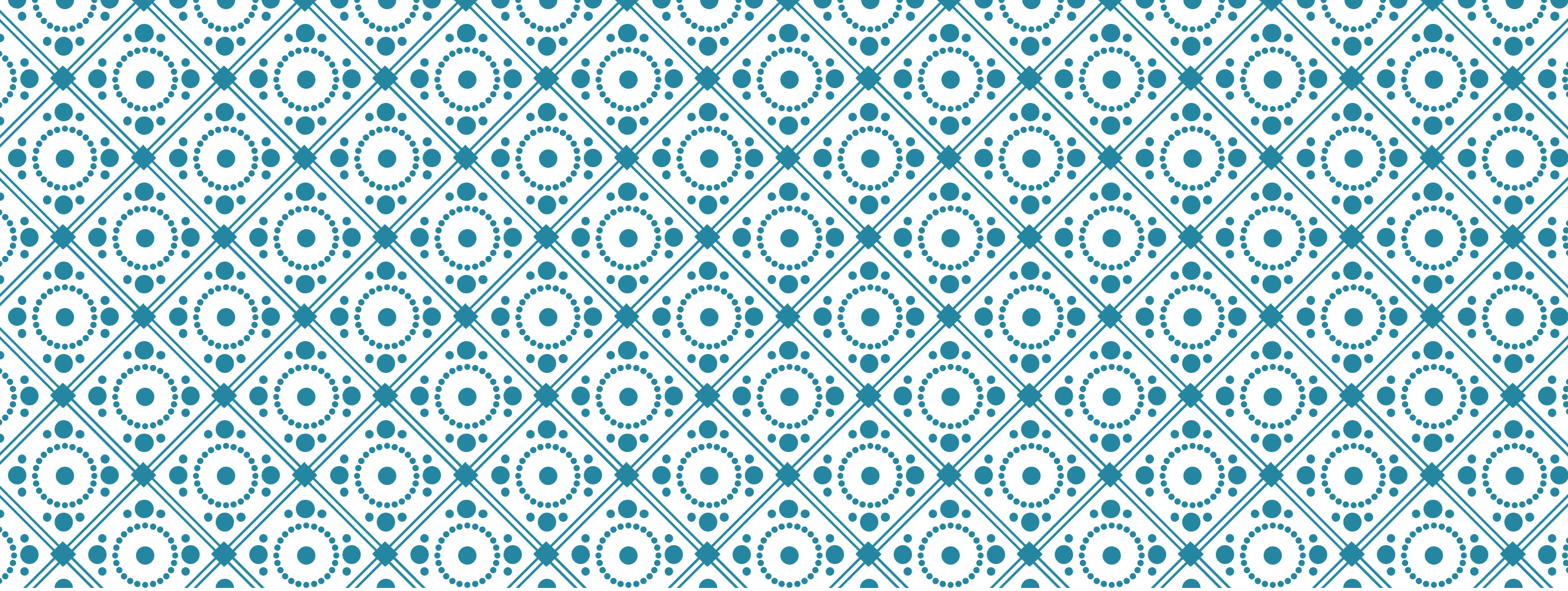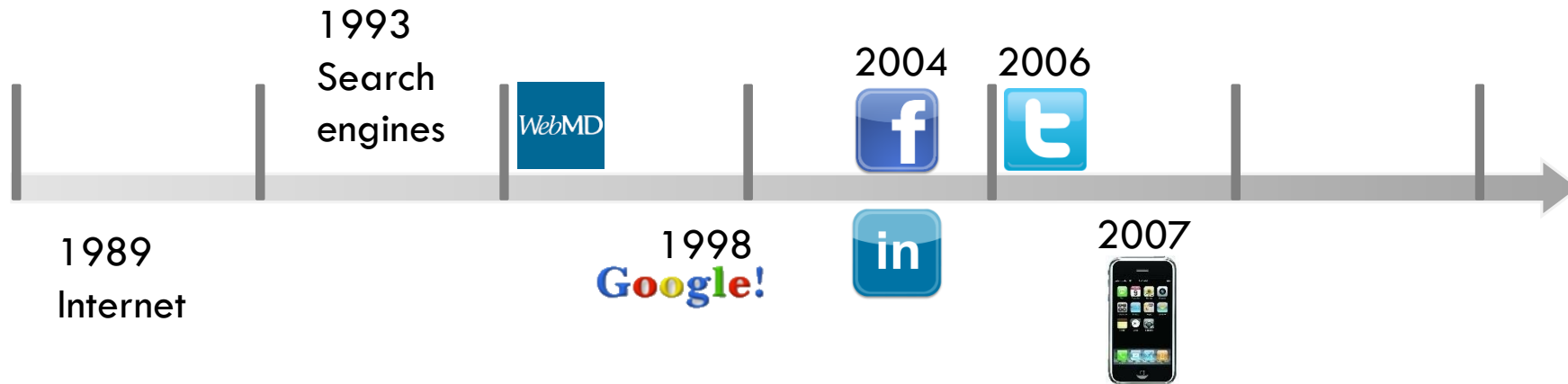
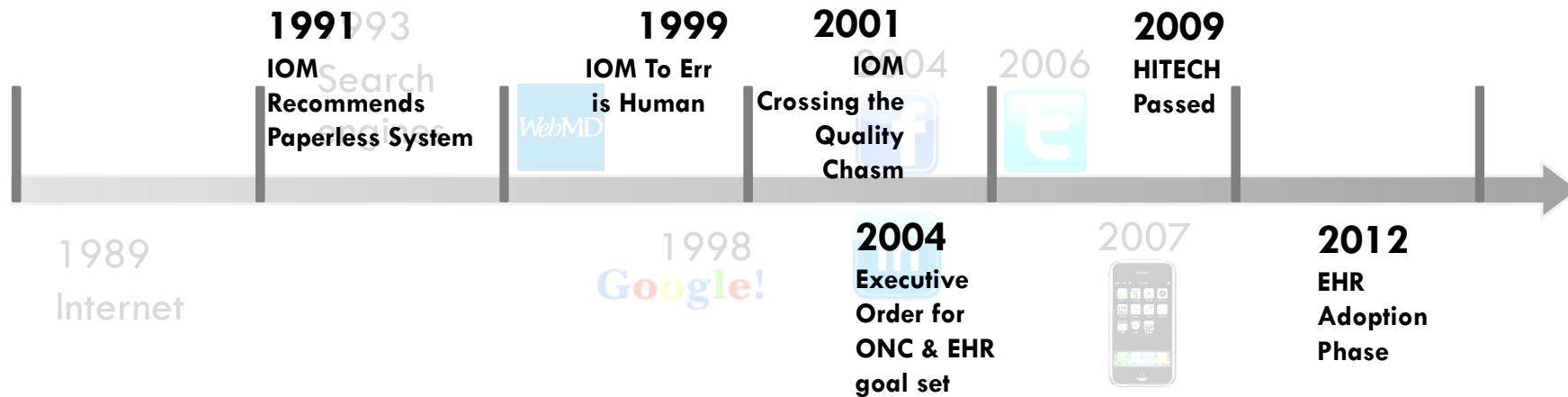# brief history of informatics

New technologies in health care

Telephones, circa 1917
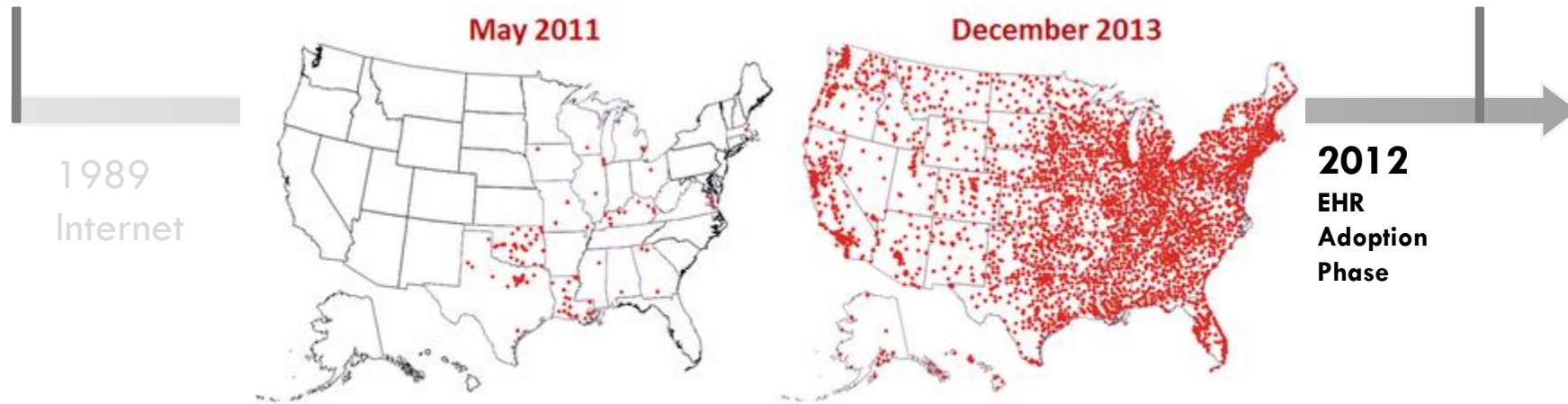
Rapid change in technology

1993
Search
engines

2004

2006

1989
Internet

1998
Google!

2007

Rapid change in health care

1991
IOM Recommends Paperless System

1993
Search engines

1999
IOM To Err is Human

2001
IOM Crossing the Quality Chasm

2004

2006

2009
HITECH Passed

1989
Internet

1998
Google!

2004
Executive Order for ONC & EHR goal set
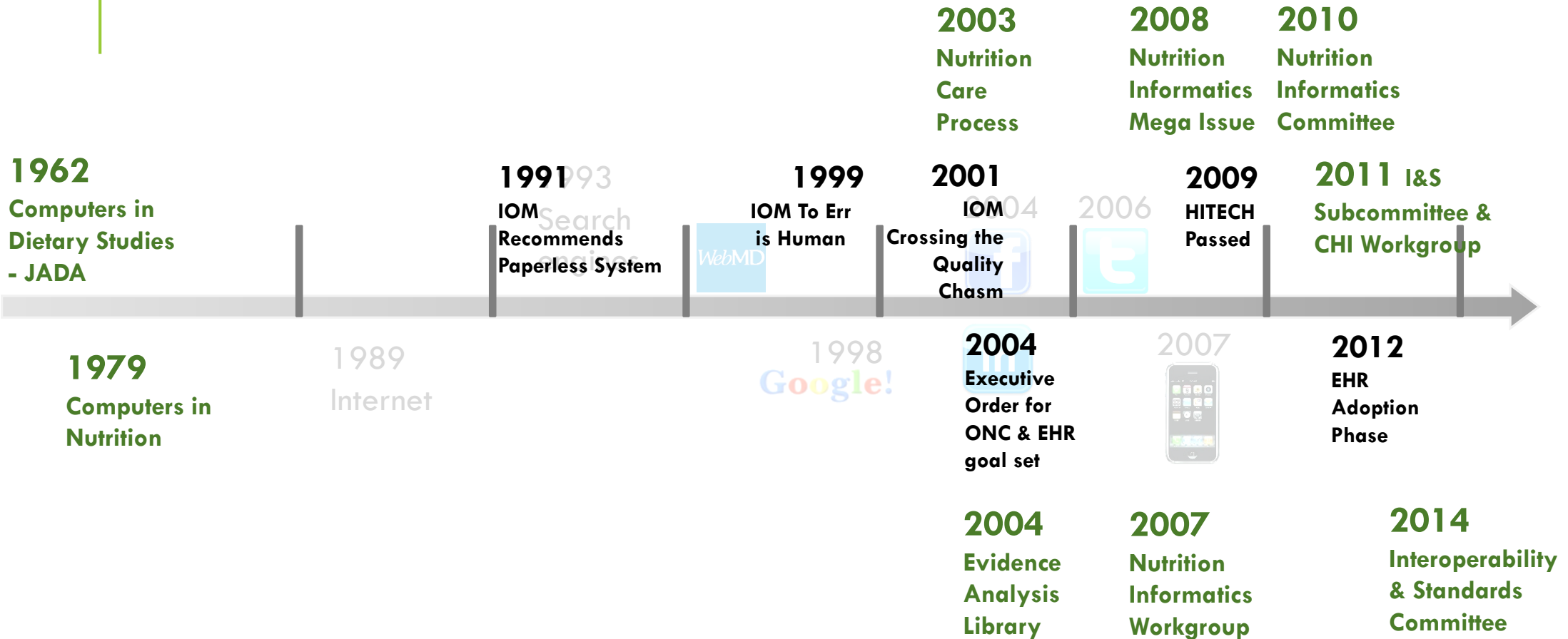
2007

2012
EHR Adoption Phase

WebMD

Rapid change in EHR

Hospitals Receiving Incentive Payments for Electronic Health Record Adoption or Meaningful Use from the CMS EHR Incentive Programs

May 2011

December 2013

1989
Internet

2012
EHR
Adoption
Phase

Rapid progress at the Academy

1962
Computers in Dietary Studies - JADA

1979
Computers in Nutrition

1989
Internet

1991
IOM Recommends Paperless System

1993
Search engines

1998
Google!

1999
IOM To Err is Human

2001
IOM Crossing the Quality Chasm

2003
Nutrition Care Process

2004
Executive Order for ONC & EHR goal set

2004
Evidence Analysis Library

2006

2007

2007
Nutrition Informatics Workgroup

2008
Nutrition Informatics Mega Issue

2009
HITECH Passed

2010
Nutrition Informatics Committee

2011 I&S
Subcommittee & CHI Workgroup

2012
EHR Adoption Phase

2014
Interoperability & Standards Committee

Where the field is now

The Academy: Nutrition Informatics Survey Goals

❑ Understand the value of electronic information to professionals and students in the nutrition field.

❑ Understand how this value has changed in the past six years.

❑ Understand the type of guidance nutrition professionals and students are looking to get from the Academy in this area.

❑ This survey builds upon research conducted in both 2008 and 2011.

❑ Comparisons to 2008 and 2011 data are presented where possible.

Primary Practice Area

Area	Percent 2008	Percent 2011	Percent 2014
Clinical Nutrition	35.6%	43.3%	43.0%
Community	13.1%	13.8%	13.2%
Food and Nutrition Management	9.6%	9.0%	9.2%
Consultation and Business	8.0%	8.5%	7.9%
Education	7.9%	7.6%	7.8%
Student	9.5%	7.2%	7.1%
Informatics	NA	1.4%	2.7%
Research	3.2%	2.7%	2.4%
Other	10.0%	6.5%	6.8%

Mechanism for Accessing Electronic Data

Professional Respondents
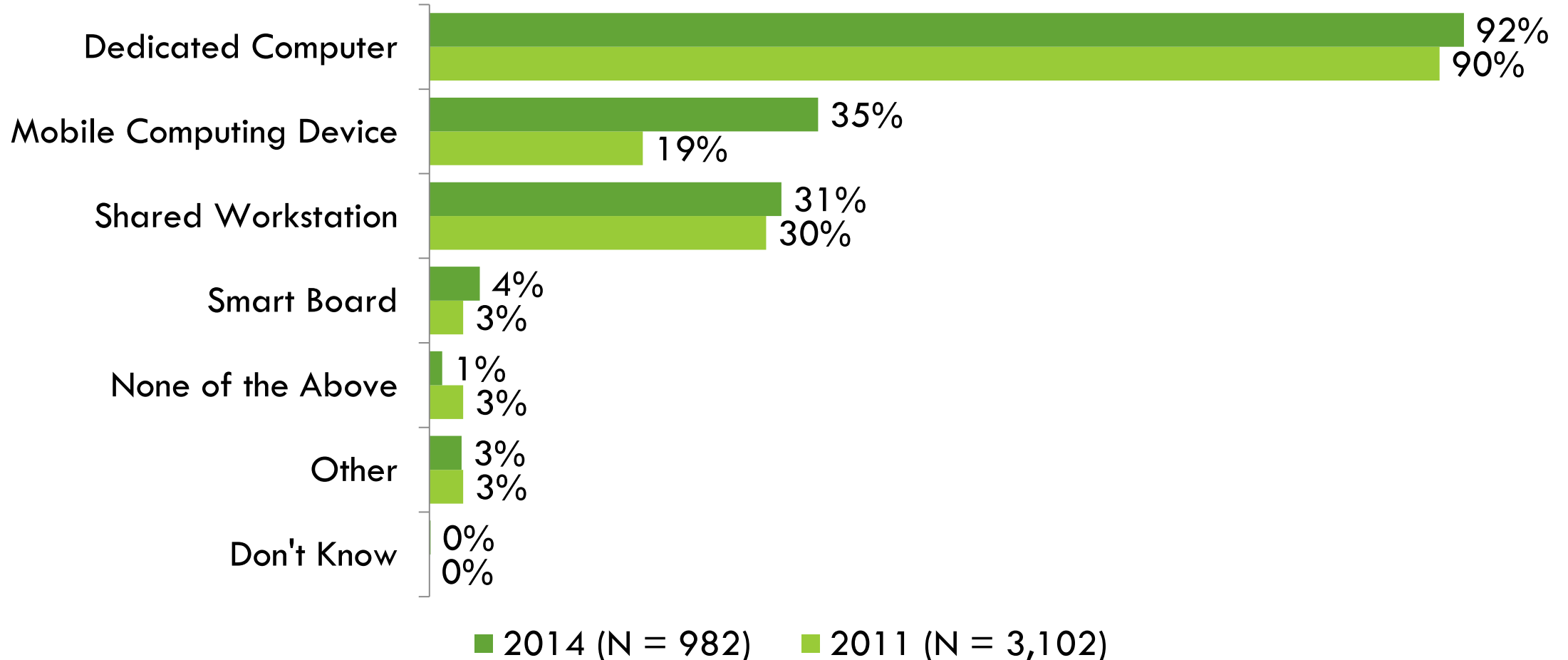
By which mechanisms do you have access to electronic data at your work place at the time when you need it to do your job? (Select all that apply).

Mechanism for Accessing Electronic Data

Student Respondents

Personally Owned Computer: 94% (2014), 98% (2011)
Mobile Computing Device: 63% (2014), 40% (2011)
Shared Workstation: 43% (2014), 60% (2011)
School-Provided Computer: 24% (2014), 31% (2011)
Smart Board: 6% (2014), 6% (2011)
Other: 1% (2014), 3% (2011)
None of the Above: 0% (2014), 1% (2011)
Don't Know: 1% (2014), 0% (2011)

■ 2014 (N = 80)   ■ 2011 (N = 240)
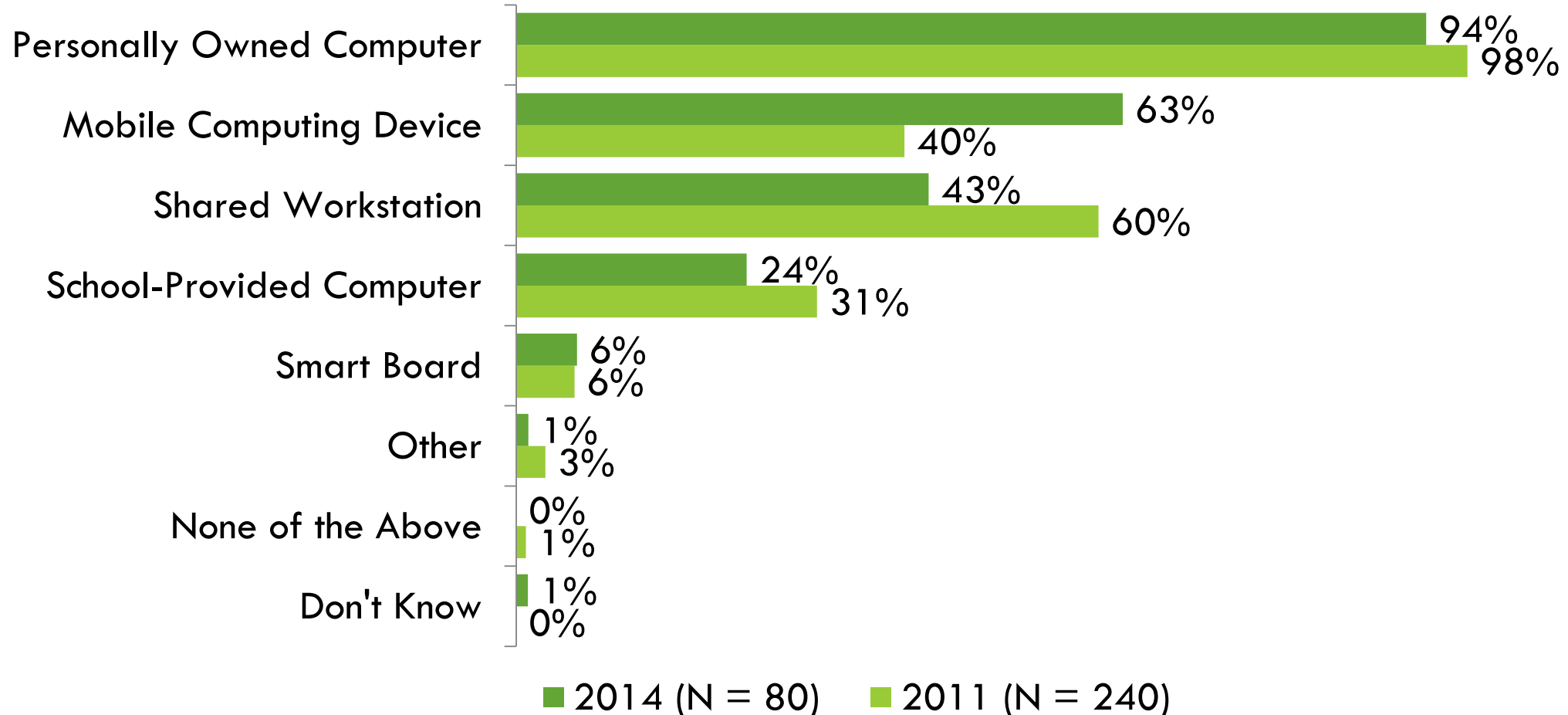
By which mechanisms do you have access to electronic data in order to accomplish your schoolwork? (Select all that apply).
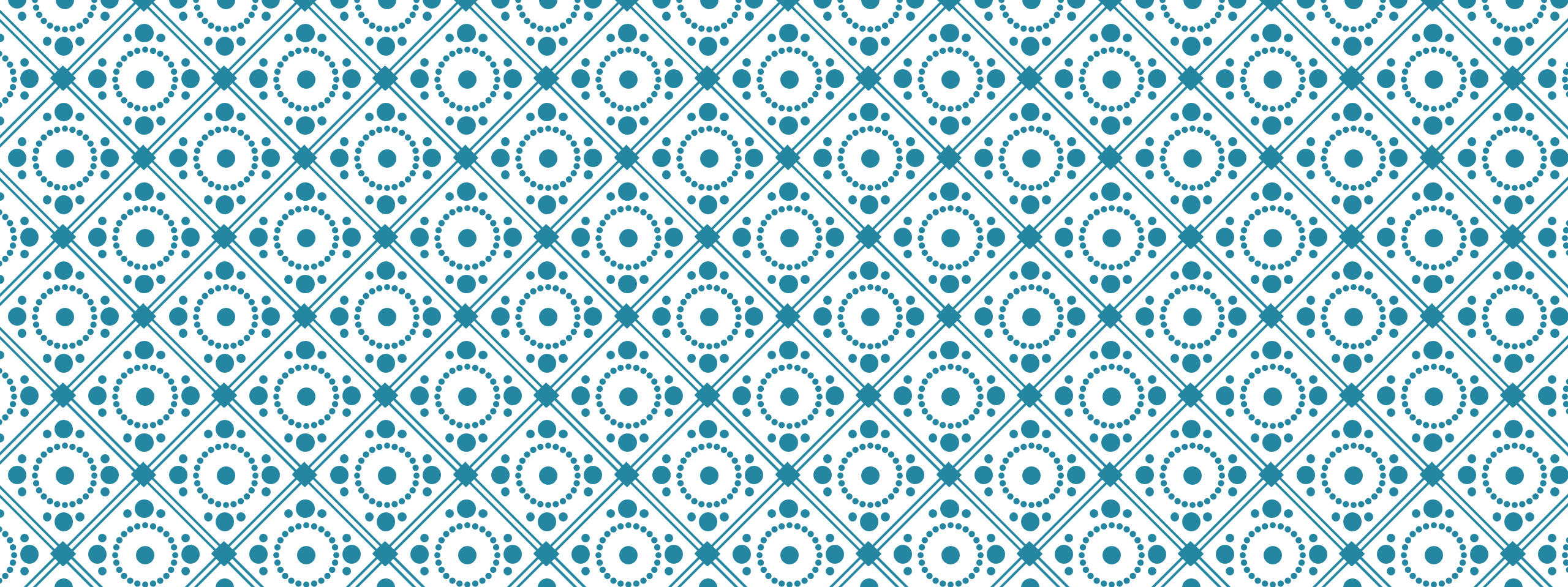
How to talk to your IT department

Tips on making your business case with IT work

Margaret Dittloff, MS RD

Learn a little lingo

- **Use Case –**just like our case studies or a patient scenario that tells the story. Write this up for your "story"

- **Workflow –** what is the process, start to finish?
  - The RDN's workflow is the Nutrtion Care Process
  - How many steps is something taking the dietitians?
  - Do they double enter or have to copy stuff into Excel, etc.? (speaks to potential error and try to quantify time/productivity impact)

- **User Interface –** what you see when you're using a program

Tips on making your business case with IT work

Margaret Dittloff, MS RD

Learn a little lingo

- **User Acceptability Testing –** this is your opportunity to test the solution (and everything else you usually use) before any changes to the system are committed. AKA Regression Testing

- **Mapping –** think of this as translating from one language to another

- **Interoperability** - the ability of different information technology systems and software applications to communicate, exchange data, and **use** the information that has been exchanged.

Interoperability:

the ability of different information technology systems and software applications to communicate, exchange data, and **use** the information that has been exchanged.
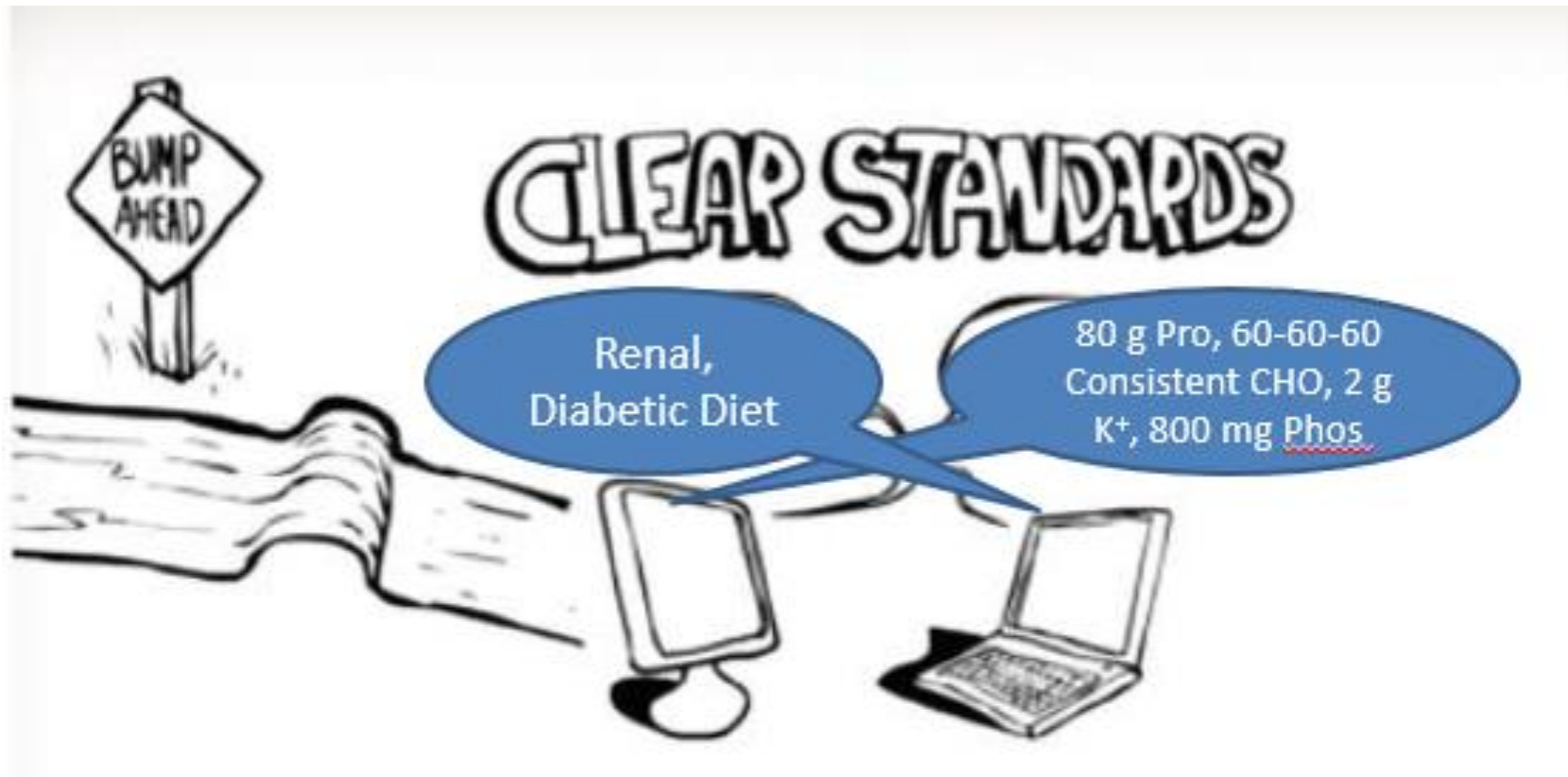
Appropriate design of NCP in EHRs

SNOMED-CT
ICD-10
LOINC

Transfer

Data Sent

eNCPT

NCP

RDN

Hospital

Data

$$$
Reimbursement &
Health costs reduction

RDN

Nursing Home
IMPACT Act

Data

Data

ANDHII
Academy of Nutrition and Dietetics
Health Informatics Infrastructure

MQii
MALNUTRITION QUALITY
IMPROVEMENT INITIATIVE

Academy of Nutrition
and Dietetics

C-CDA Implementation Guide Provides Technical Instructions
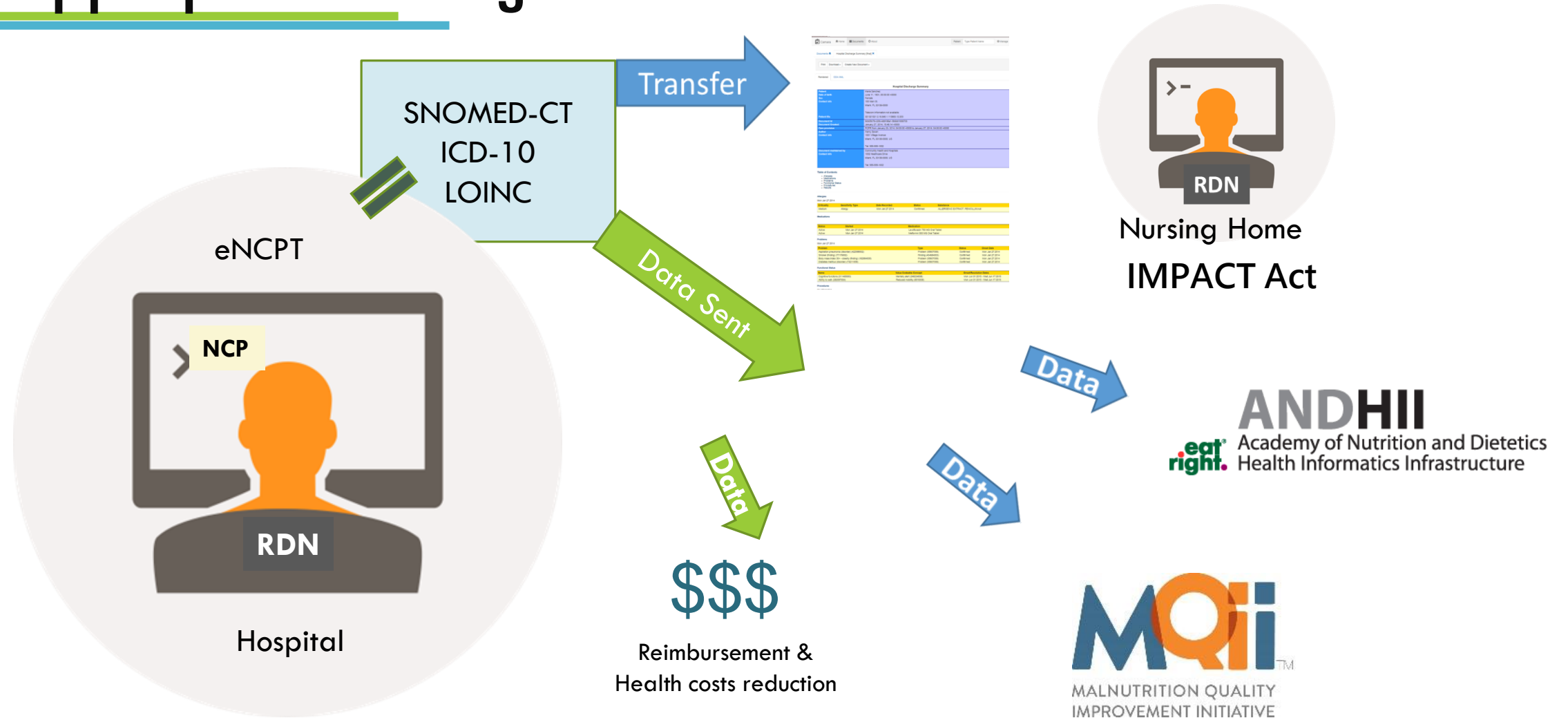
Tips on making your business case with IT work

Margaret Dittloff, MS RD

- You are the champion and the content expert

- Start with WHY

- Grab them in the first 60 seconds with a story

- Reinforce the 3 takeaway points you want them talking about
  - Quality data reporting
  - Patient safety
  - Patient satisfaction

Tips on making your business case with IT work

Margaret Dittloff, MS RD

- Prioritize

- Find a stakeholder partner (Patient Engagement, Quality Team, Coding & Documentation)

- Stay engaged with them on the project

- Remember – Food helps! Always feed your programmers. They will come to your meeting if there are snacks. Very stereotypical but don't knock what works!

How to talk to your IT department

Assess/Diagnose

❑What is the problem?

❑Have others in your department/area had this problem?

Intervene

❑Write up your use case and workflow

❑Contact IT and stakeholders

Monitor/Evaluate

❑Ask for and complete user acceptability testing

❑Track outcomes once solution is implemented

Phone-a-friend

Nutrition Informatics Community of Interest, open to all Academy members:

https://adanic.webauthor.com

Clinical Nutrition Management DPG Informatics Resources:

http://www.cnmdpg.org/page/informatics-resources-2

What if you are the IT department?

How My Small Business Uses Technology
BY LUCILLE BESELER, MS, RDN, LDN, CDE, FAND

THE FEED

FOODANDNUTRITION.ORG

Google it

❑ Search a few key words for what you want to do

❑ Search Youtube for video tutorials

❑ Try searching "the thing you want site:the name of the site you want"

    ❑ Example- "Excel site:howtogeek.com"

Microsoft Excel: Formulas and Functions - How-To Geek
https://www.howtogeek.com/school/microsoft-excel-formulas-and-functions/ ▾
Feb 7, 2011 - This How-To Geek School class is intended for people who use **Excel**, or try to use **Excel**
but are intimidated by the concept of formulas and ...

Excel Formulas: Why Do You Need Formulas and Functions?
https://www.howtogeek.com/school/microsoft-excel-formulas-and.../lesson1/ ▾
Feb 10, 2014 - This How-To Geek School class is intended for people who use **Excel**, or try to use
Excel, but are intimidated by the concept of formulas and ...

Excel Formulas: Lookups, Charts, Statistics, and Pivot Tables
https://www.howtogeek.com/school/microsoft-excel-formulas-and.../lesson5/ ▾
Feb 14, 2014 - Having reviewed basic functions, cell references, and date and time functions, we now
dive into some of the more advanced features of ...

Excel Formulas: Useful Functions You Should Get to Know
https://www.howtogeek.com/school/microsoft-excel-formulas-and.../lesson4/ ▾
Feb 13, 2014 - In this lesson we'll discuss categories of functions – what they do and various examples
– and to illustrate how they work, we'll show you ...
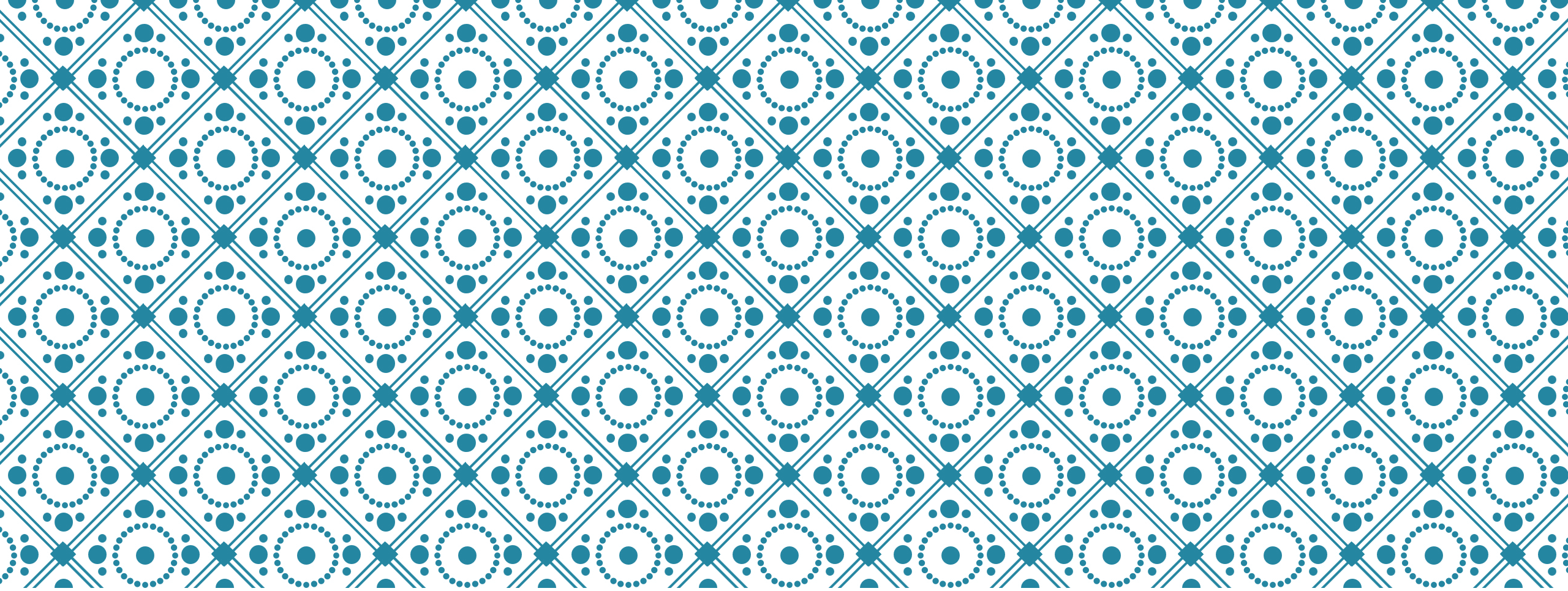
essential practice competencies

Computer literacy skills for all levels of practice:

1. Demonstrate principles of computer file organization including information storage, data protection (backing up data), and basic computer skills.

2. Demonstrate basic proficiency with use of selected operating systems (Mac OS, Windows, Linux).

3. Use basic software applications to create documents, spreadsheets, and presentations.

4. Access and use a web browser to find information.

5. Demonstrate proper use of email, including sending, receiving, forwarding, storing, and attachments. Use proper email etiquette.

- Practice Paper of the Academy of Nutrition and Dietetics : Nutrition Informatics. *Journal of the Academy of Nutrition and Dietetics*. 2012;112(11):1859–1859.

Information literacy skills for all levels of practice:

1. Quickly identify, evaluate, and disseminate accurate information to consumers and other health care professionals.

2. Manage user security to protect patient/client information.

3. Retrieve a reasonable number of relevant documents using PubMed to search the Medline database.

4. Find and evaluate online information sources using appropriate search engines.

5. Understand appropriate use of social media tools.

6. Familiarity with basic functions of clinical information systems (e.g., computerized provider order entry, results reporting, documentation, report generation).

- Practice Paper of the Academy of Nutrition and Dietetics : Nutrition Informatics. *Journal of the Academy of Nutrition and Dietetics*. 2012;112(11):1859–1859.

Essential Practice Competencies

Essential Practice Competencies for the Commission on Dietetic Registration's Credentialed Nutrition and Dietetics Practitioners

Sphere 5: Informatics

Uses technology to retrieve, interpret, store and disseminate information in an accurate, professional and ethical manner for the delivery of nutrition and dietetics services

CDR Sphere 5: Informatics

Registered Dietitian Nutritionists (RDNs)	Nutrition and Dietetics Technicians, Registered (NDTRs)
Competencies and Performance Indicators	
5.1 Acquires knowledge of technology systems consistent with role and responsibilities	
5.1.1 Demonstrates proficient use of technical operating systems and software to communicate and disseminate information; to collect, track and retrieve data; and to create documents, spreadsheets and presentations	
5.1.2 Applies understanding of informatics terminology and input and output devices (e.g. laptop, smartphone, flash drive).	
5.1.3 Seeks guidance from technology advisors or experts when requirements are beyond competence.	
5.1.4 Demonstrates knowledge of system interfaces used in the delivery of services	

CDR Sphere 5: Informatics

Registered Dietitian Nutritionists (RDNs)	Nutrition and Dietetics Technicians, Registered (NDTRs)
Competencies and Performance Indicators	
5.2 Utilizes technology according to organization needs and workplace policies and procedures.	
5.2.1 Integrates technology platforms with other internal and external services (e.g. risk management, disease management, data tracking and reporting).	
5.2.2 Leads or participates on teams to design or develop criteria for the selection or implementation of software programs, applications or systems to advance work objectives.	5.2.2. Participates on teams to design or develop criteria for the selection or implementation of software programs, applications or systems to advance work objectives.
5.2.3 Advocates, implements and monitors security and data protection practices.	
5.2.4 Determines the workflow and resource needs for clinical information system implementation, maintenance and upgrades.	
5.2.5 Instructs or advises others on the use of clinical information systems, nutrition informatics tools and other technology topics.	
5.2.6 Develops and implements policies and procedures consistent with privacy and confidentiality legislation and regulation.	
5.2.7 Suggests, develops and/or implements innovative enhancements and new software platforms, applications and technologies to meet the needs of the target group and the environment.	

CDR Sphere 5: Informatics

Registered Dietitian Nutritionists (RDNs)	Nutrition and Dietetics Technicians, Registered (NDTRs)
Competencies and Performance Indicators	
5.3 Demonstrates ethical and professional behavior when using technology.	
5.3.1 Complies with legislative requirements and organization policies for maintaining and storing personal health information.	
5.3.2 Maintains technological security and confidentiality in the electronic sharing, transmission, storage and management of information.	
5.3.3 Monitors compliance with privacy and confidentiality legislation and organization policies related to informatics.	
5.3.4 Takes appropriate action in response to unauthorized access, use and disclosure of information.	
5.3.5 Demonstrates professional behaviors and boundaries when using social media platforms.	

CDR Sphere 5: Informatics

| Registered Dietitian Nutritionists (RDNs)	Nutrition and Dietetics Technicians, Registered (NDTRs)
Competencies and Performance Indicators	
5.4 Demonstrates the ability to store and retrieve data using the International Dietetics and Nutrition Terminology (IDNT) and other standardized languages.	
5.4.1 Complies with IDNT when documenting customer information in electronic databases	
5.4.2 Uses standardized terminology to describe nutrition assessment data, nutrition diagnoses, nutrition interventions, and nutrition monitoring and evaluation.	
5.4.3 Queries databases composed of standardized terms to retrieve customer information for practice and process improvement to monitor the effectiveness of interventions in individuals and populations	

DRAFT Future Education Model

Bachelor Degree Programs	Master Degree Programs
Competencies and Performance Indicators	
1.12 Applies nutrition informatics in the decision making process	
1.12.1 Applies technology in the decision making process	1.12.1 Analyzes data derived from electronic media to make best decisions related to nutrition and diet
1.12.2 Describes factors to consider when accessing and evaluating nutritional health information online	1.12.2 Evaluates accuracy and reliability when accessing and evaluating nutrition information online
1.12.3 Identifies trends in nutritional health care and food systems	1.12.3 Designs and operates nutrition informatics systems in practice
1.12.4 Uses electronic databases to obtain information	1.12.4 Analyzes electronic databases to obtain nutrition information and evaluate credible sources in decision making
1.12.5 Proficiently uses new technology to enhance practice and client/patient care	
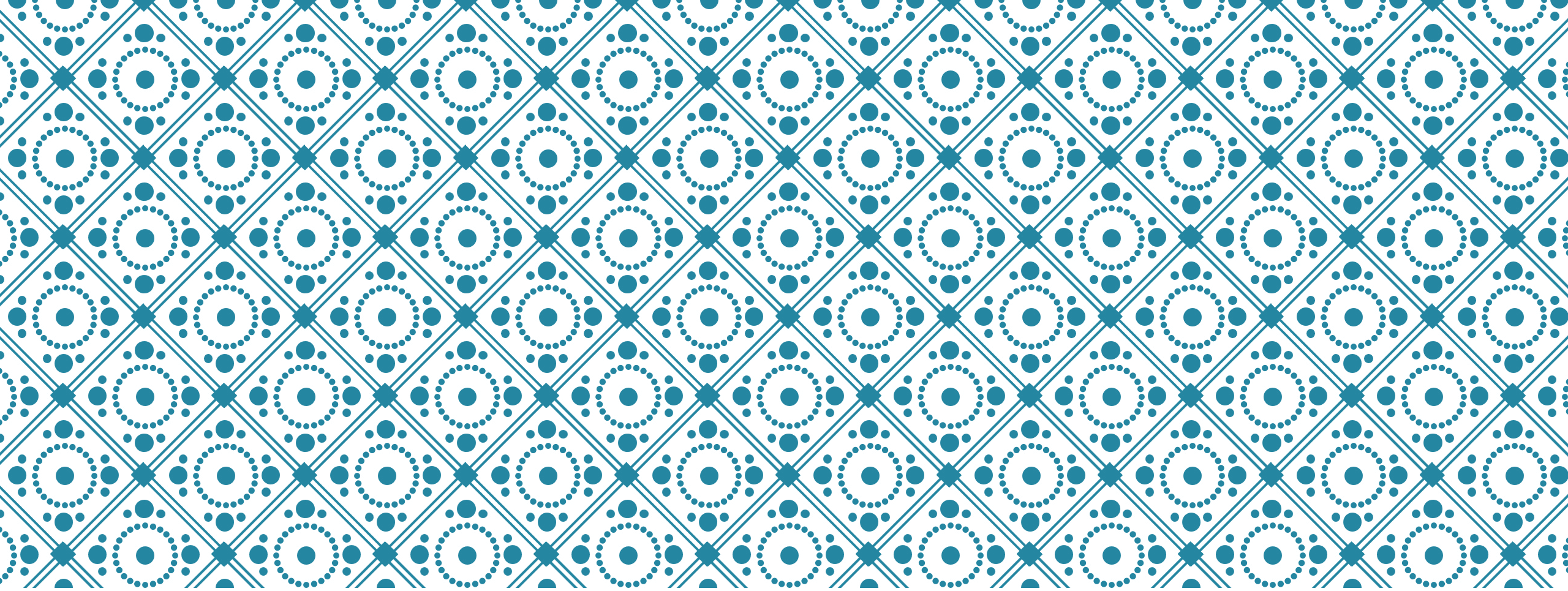
resources for learning more and career opportunities coming in the future

Nutrition Informatics Certificate

Nutrition Informatics Certificate Modules

1) Overview of Informatics at the Academy: Academy Resources and Tools

2) Data Follows the Patient: Interoperability, Patient Generated Data, Protected Health Information, Security and Ethics

3) Communications: Current Capabilities and Future Endeavors, Social Media, Telehealth, the Direct Project, and Blue Button

4) Nutrition in Electronic Health Records and Health Information Technology

5) Analytical Skills: Data Big and Small

Career opportunities in informatics

App development

Design/manage clinical, research, or foodservice databases

Menu development and maintenance

Training in EHRs, nutrition or foodservice software (or become a Super User in your current role)

Clinical Data Analyst or Clinical Informatics Analyst

Research Analytics Specialist

Online education

Clinical Informatics Data Analyst

What Does A Clinical Informatics Data Analyst Do, Exactly?

The Clinical Informatics Data Analyst will work independently to document external data acquisition policies and procedures as well as interface with other business units to define and document data needs and ad-hoc analysis requirements.

Responsibilities include:

Assists with analysis of external data definitions documentation and mapping process

Performs a QA function for the data integration processes and repository metrics

Collaborates with other staff to document data needs and metric definitions

Validates data load processes and the quality of the data loaded into clinical data repositories

Responsible for maintaining, storing, mapping and analyzing medical, lab and any other health data in compliance with HIPAA policies and procedures

Coordinates with LAN and IT Security teams in order to utilize PGP encryption software and File Transfer Protocols to make medical claims transactions HIPAA compliant

Uses software such as SAS, Access, and Excel to provide data mapping for medical claims integration using BusinessObjects, and SQL

Practice Applications

Join the Nutrition Informatics Community of Interest: https://adanic.webauthor.com

Follow The Feed blog http://www.foodandnutrition.org/Blog/The-Feed/

Watch the April 4 NIC/ISC Webinar

Follow SocialPro @ Food & Nutrition Mag

Resources

www.himss.org/tiger

Nutrition Informatics Delphi Study

Nutrition Informatics Practice Paper

2014 Nutrition Informatics Survey Publication

Many more included on the session handout and at http://u.osu.edu/sarah

Questions?

Sarah Rusnak, MS RD LD

sarah.rusnak@osumc.edu

http://u.osu.edu/sarah

OHIO ACADEMY
of Nutrition and Dietetics