Health & Clinical Informatics Major

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Health & Clinical Informatics (HCIN) major

• Primary goal of HCIN major is to educate the future developers and managers of health and clinical information systems

• Individuals with a variety of backgrounds are provided a strong technical grounding in biomedical informatics, health and medicine, data and computing sciences, and organizational and management sciences so that they may assume positions that require a thorough understanding of both information technology and the health care environment
HCIN major

• Required courses in domains
  – Biomedical informatics
  – Healthcare
  – Data and computing sciences (being renamed from Computer Science)
  – Organizational and management sciences
  – Evaluation

• Additional work depending on program
  – Capstone (MS non-thesis)
  – Thesis (MS thesis)
  – Advanced courses and dissertation (PhD)
Informatics is not a spectator sport!

- Many hands-on activities for students
  - Research projects of faculty
  - Operational activities, including in OHSU Health System
- Can pursue as practicum or internship
- May lead to capstone, thesis, or dissertation
A growing understanding of the work of informatics professionals

<table>
<thead>
<tr>
<th>Health Informatics</th>
<th>Task statements</th>
<th>KS statements</th>
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</thead>
<tbody>
<tr>
<td><strong>Domains</strong></td>
<td></td>
<td></td>
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<tr>
<td>Domain 1. Foundational Knowledge and Skills</td>
<td>NA</td>
<td>31</td>
</tr>
<tr>
<td>Domain 2. Enhancing Health Decision-making, Processes, and Outcomes</td>
<td>11</td>
<td>21</td>
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<tr>
<td>Domain 3. Health Information Systems</td>
<td>26</td>
<td>36</td>
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<tr>
<td>Domain 4. Data Governance, Management, and Analytics</td>
<td>17</td>
<td>28</td>
</tr>
<tr>
<td>Domain 5. Leadership, Professionalism, Strategy, and Transformation</td>
<td>20</td>
<td>28</td>
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<tr>
<td><strong>Total</strong></td>
<td>74</td>
<td>144</td>
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<tr>
<th>Clinical Informatics Subspecialty (CIS)</th>
<th>Task statements</th>
<th>KS statements</th>
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<td><strong>Domains</strong></td>
<td></td>
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<tr>
<td>Domain 1. Foundational Knowledge and Skills</td>
<td>NA</td>
<td>26</td>
</tr>
<tr>
<td>Domain 2. Improving Care Delivery and Outcomes</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>Domain 3. Enterprise Information Systems</td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>Domain 4. Data Governance and Analytics</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Domain 5. Leadership and Professionalism</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>42</td>
<td>142</td>
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- From 4 (Gardner, 2009) to 5 domains (Silverman, 2019; Gadd, 2020)
Where does data science fit in? (Payne, 2018)

Biomedical Informatics and Data Science Process Cycle

- Informatics also uses knowledge to create interventions and tools that impact the world
- Biological, Social or Technology Processes
- Data Science and Informatics both transform data from the world into knowledge
- “Efferent” Processes (from knowledge to world)
- “Afferent” Processes (from world to knowledge)
- Core Skills
  - Computation
  - Algorithms
  - Machine Learning
  - Statistics
  - Ontologies
  - Databases
  - Domain Knowledge
  - Visualization
- Knowledge
Plenty of high-paying jobs in clinical informatics

Source: HealthITJobs.com

Even higher for some:
- Data analytics
- Physicians
- High-end leadership
DMICE online

- DMICE seminars
  - YouTube
    - https://www.youtube.com/channel/UCCekPERb6i3xXEDQxwIvCeIA

- Web and blog
  - Web
    - http://www.ohsu.edu/informatics
  - Blog
    - http://www.ohsu.edu/blogs/health-data/

- Social media
  - Twitter
    - @OHSUInformatics
  - LinkedIn
    - https://www.linkedin.com/groups/962257/
  - Facebook
    - https://www.facebook.com/ohsu.informatics
Thank You!

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