

IE Courses and Options



Presenters

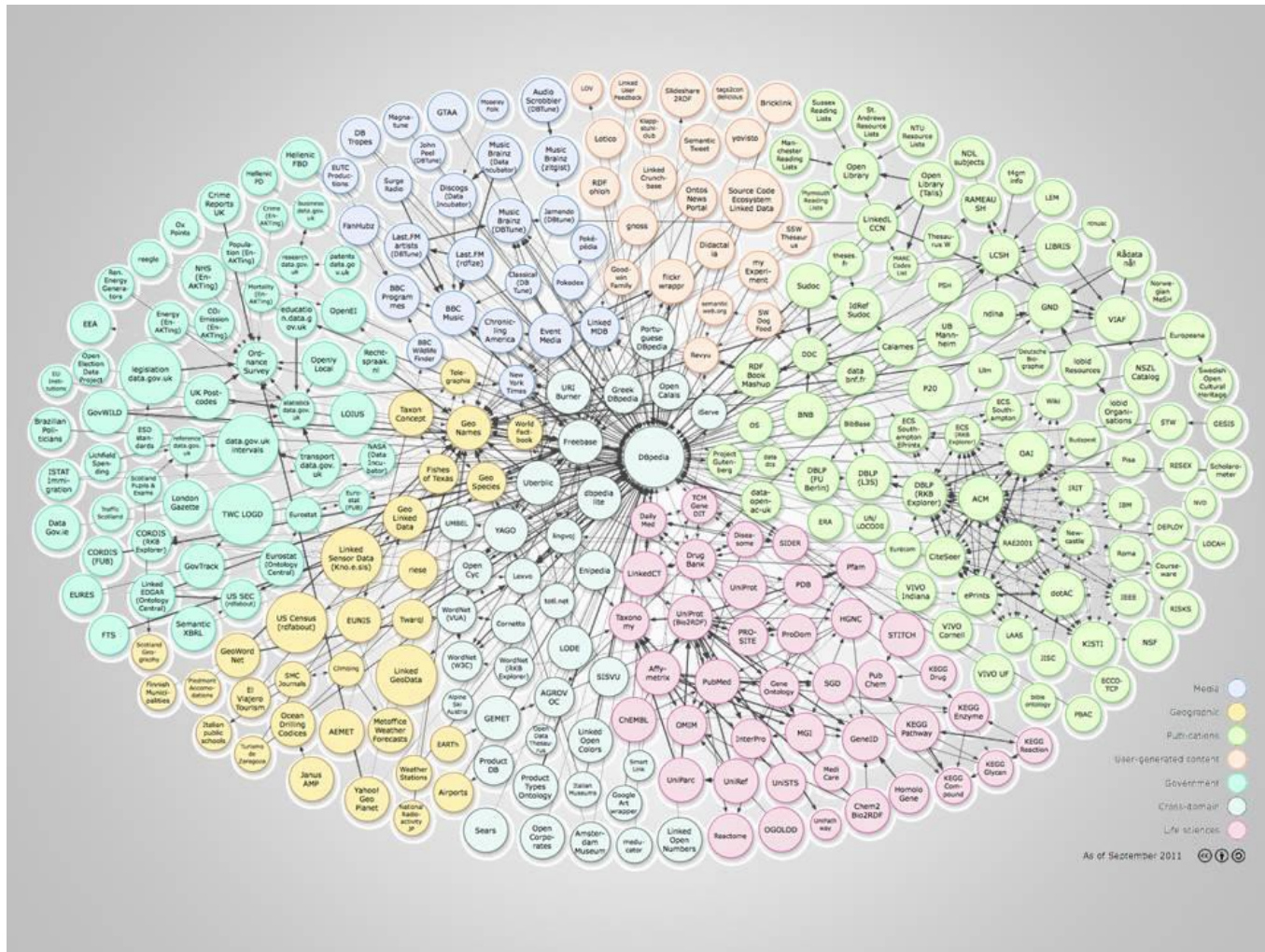
- **Professor Michael Gruninger**
 - *Information Engineering*
- **Professor Daniel Frances**
 - *Operations Research*
- **Professor Paul Milgram**
 - *Human Factors*

Information Engineering

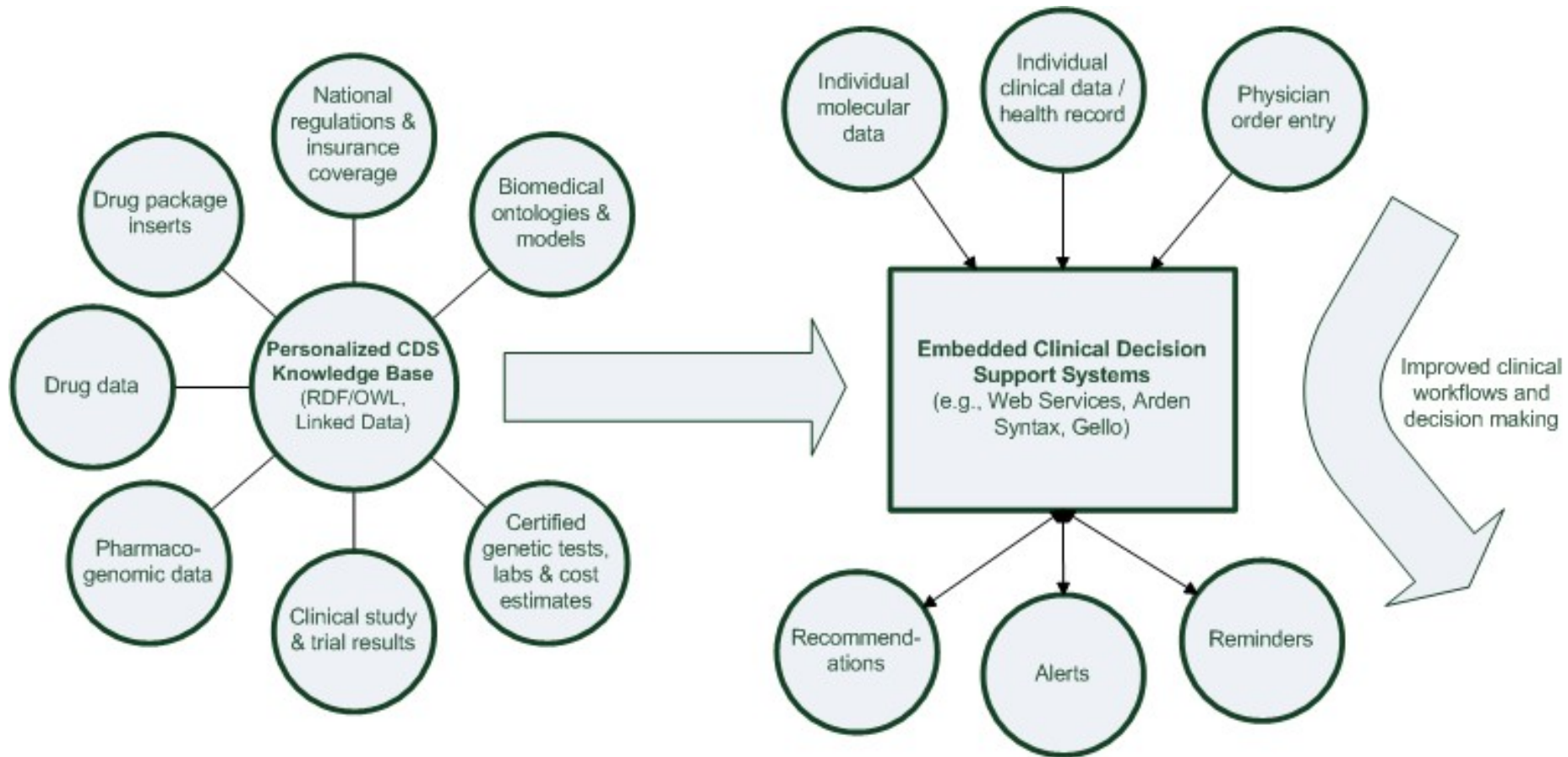
Professor Michael Gruninger

<http://stl.mie.utoronto.ca/gruninger.html>

Connecting Information Across the World



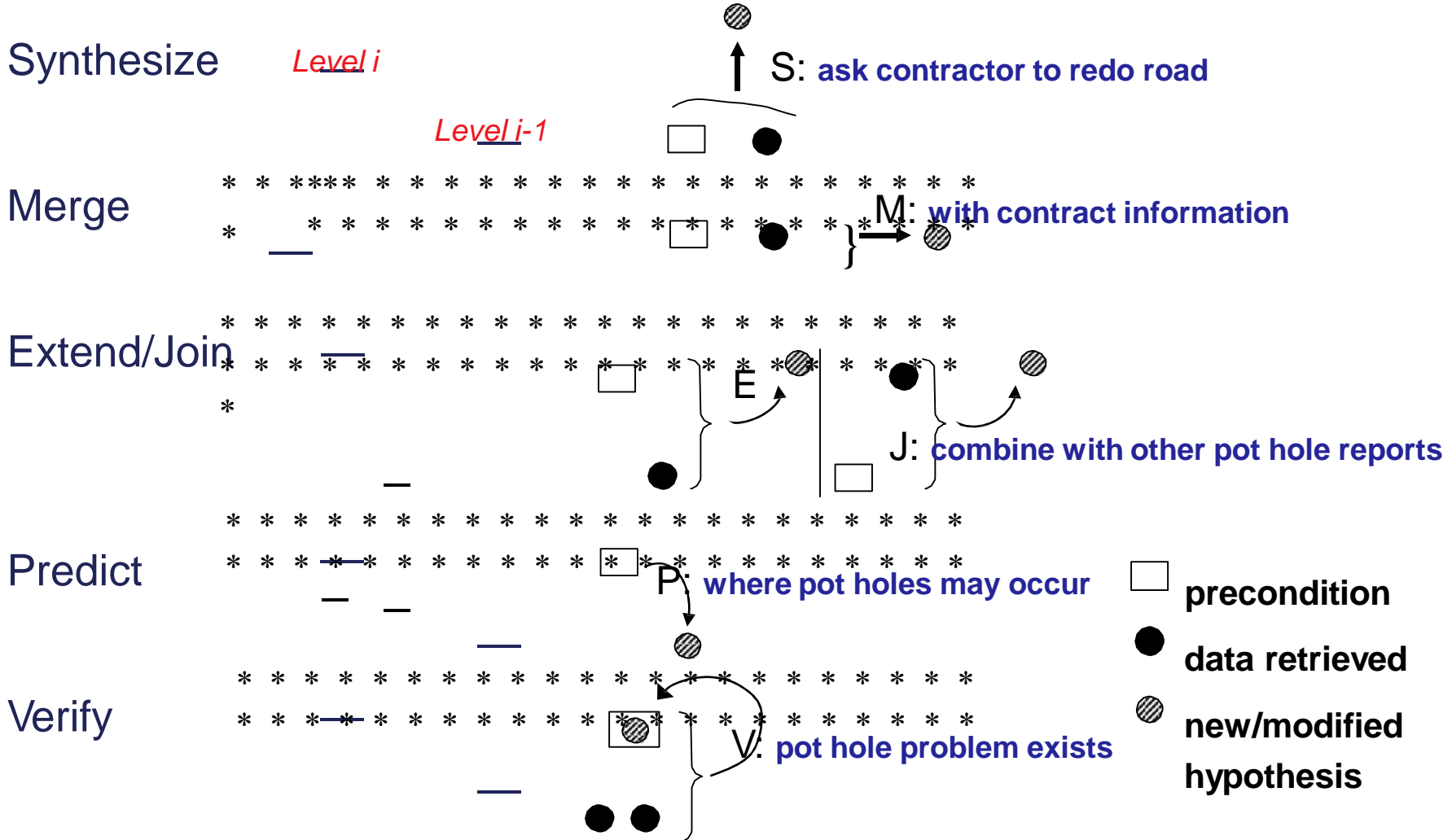
Integrated Proactive Medicine



Information

Reasoning

From Information to Knowledge to Action: Toronto 311



Supply Chain

Integrating Materiel, Manufacturing and Retail



Information Engineering

- Information Engineering is the engineering of
 - Information, knowledge, and decision support, and
the systems with which they are delivered
to support the achievement of organizational goals through the efficient and flexible operation of business processes.

Information Engineers...

- ...form a bridge between the technical side (software engineers, data modelers) and the business side (business analysts, process planners, managers)
- Focus on the strategic role of information systems in achieving business goals
 - not only **how** to build an information system but also **why**

3rd Year Curriculum Overview

FALL

Core Courses

- **MIE343:** Industrial Ergonomics and the Workplace
- **MIE350:** Design and Analysis of Information Systems
- **MIE360:** Systems Modelling and Simulation

Technical Electives (choose one)

- **MIE344:** Ergonomic Design of Information Systems
- **MIE354:** Business Process Engineering
- **MIE365:** Operations Research III: Advanced OR

CS/HSS Elective

Natural Science Elective

3rd Year Curriculum Overview

WINTER

Core Courses

- **MIE335:** Algorithms & Numerical Methods
- **MIE363:** Resource and Production Modelling
- **MIE364:** Quality Control and Improvement

Technical Electives (choose one)

- **MIE345:** Case Studies in Human Factors and Ergonomics
- **MIE367:** Cases in Operations Research
- **MIE465:** Analytics in Action
- **MIE469:** Reliability and Maintainability Engineering

CS/HSS Elective

4th Year Curriculum Overview

FALL

Core Courses

- **MIE463:** Integrated System Design
- **MIE490:** Capstone Design

Technical Electives:

- **MIE344:** Ergonomic Design of Information Systems
- **MIE354:** Business Process Eng
- **MIE451:** Decision Support Systems
- **MIE498H/Y:** Research Thesis

Full list of Technical Electives available at
[2018-2019 Academic Calendar](#)

WINTER

Core Courses

- **MIE459:** Organization Design
- **MIE490:** Capstone Design

Technical Electives:

- **MIE498H/Y:** Research Thesis
- **MIE457:** Knowledge Modelling and Management
- **MIE465:** Analytics in Action

Information Engineering Faculty

- Michael Gruninger



Christopher Beck



Scott Sanner
(No photo)

- Mariano Consens



Mark Fox



Careers for Information Engineers

- Designer (products, interfaces)
- Systems Analyst, Systems Architect
- Financial services
- Manager
- Consultant
- Start-Up Company

Graduate Studies for Information Engineers

- Data analytics / Big Data
- Artificial Intelligence
 - Knowledge representation and reasoning
 - Semantic Web
 - Intelligent manufacturing
 - Intelligent scheduling