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Improving healthcare decisions

Health Economics and Outcomes Research Competencies Framework™

ISPOR Europe, Barcelona Spain
November 13, 2018

Overview and Survey Results

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- Copyright:

- Trademark:
  Overarching:
  ISPOR Health Economics and Outcomes Research Competencies Framework™
- Inventory:
  ISPOR Health Economics and Outcomes Research Competencies Inventory™
- Confidentiality:

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Acknowledgement and Thanks

- Nancy Berg, Dick Willke, Betsy Lane and the ISPOR Staff
- Rebecca Corey of the ISPOR staff for extraordinary effort during this entire process
- ISPOR BOD
- ISPOR Institutional Council
- ISPOR Faculty Advisor Council
- Dr. Ebere Onukwugha and (almost Dr.) Husam Albarmawi for insightful analytical skills and incredible response time to produce the results

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ISPOR HEOR Competencies Framework™

Overview of the Initiative

Initiative Objectives

- To comprehensively define the health economics and outcomes research discipline, including:
  - Competencies professionals need for success in the field
  - Competency gaps that are often seen in candidates and employees
  - Training/education gaps that need to be addressed

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Scope, Phases, and Timeline

We are here!

Phase I	Phase II	Phase III & Beyond
Competencies Inventory (CI)	**Competency Gaps**	**Training/Education Gaps**
Identify and codify a *super-set** of key competencies needed by HEOR professionals for success in the field	Assess the ***Importance*** of the CI to the HEOR field as well as their ***Relevance*** to HEOR job types Study academic HEOR degree programs to see how they cover the various competencies	Ascertain what professional development opportunities are available and the training/education gaps that exist and need to be addressed
2016-2017	2018	Late 2018 and beyond

* All practicing HEOR professionals should be aware of the super-set of competencies. "Awareness" does not mean that an HEOR professional needs to be proficient in all of the competencies in the inventory. Future work will define specialties and subsets from the competency inventory that practitioners are required to master to be competent and effective professionals in these specialty areas (e.g., health economics, patient-reported outcomes, etc.)

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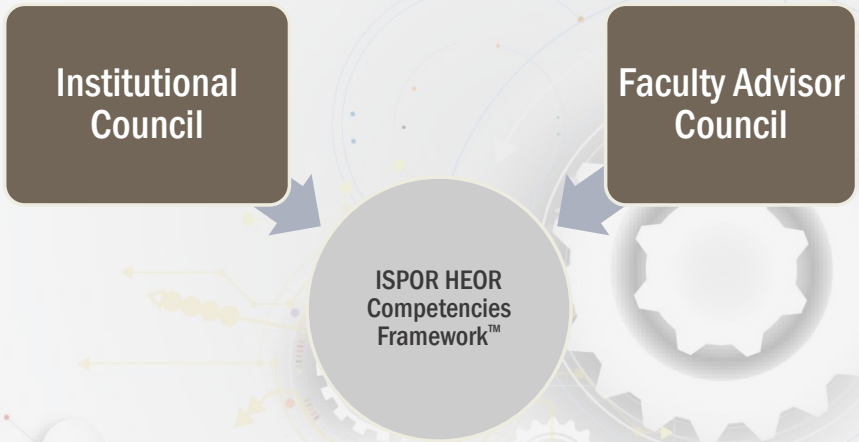
Working Group



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41 Competency in 10 Domains

- Business Management
- Career Development
- Communication & Influence
- Drug Development
- Economic Methods
- Health System & Payer Expertise
- Observational Methods
- HEOR Methods
- PROs & Patient Preference Methods
- Statistics & Modeling Methods

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ISPOR 2018 Competency Surveys

- Three surveys were conducted to understand the importance & relevance of the ISPOR Competencies to the general members as well as the academic offerings from relevant HEOR-related degree programs that are available to acquire them
- **General Member Survey** - Assess the importance and relevance of all 41 competencies by job type and work seting
- **Academic Member (Faculty) Survey** – Assess how the competencies are currently covered within academic programs
- **Academic (Student Member) Survey** – Assess how the students are currently exposed to the competencies within their curriculum.

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ISPOR HEOR Competencies Framework™

General Member Survey Results

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ISPOR 2018 Competency Surveys
General Member Survey

- We targeted all ISPOR members excluding Academics and Students. We asked their opinion on the ***Importance*** of each Competency to the overall HEOR discipline and the ***Relevance*** of each competency to the specific job held by the respondent.
  - *Importance* is the degree to which a competency has **significant value within the HEOR discipline**. It was rated on five (5) point scale: "Critical" (5), "Very Important" (4), "Important" (3), "Somewhat Important" (2), "Not Important" (1). We had a response choice "Not Familiar" for those not sufficiently familiar with a competency".
  - *Relevance* as rated on how **relevant the competency is to their current job** responsibilities. It was rated on 5 point scale of "Critical" (5), "Very Relevant" (4), "Relevant" (3), "Somewhat Relevant" (2), "Not Relevant" (1). We also offered response choice "Not "Familiar" for those not sufficiently familiar with that competency.
- The survey was completed in August 2018. We had 493 responses from a potential pool of ~11,000 ISPOR members (response rate = ~4%)

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General Member Survey Results
Responses by Region (% shown; N=493)

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General Member Survey Results
Job Type of the Respondents

Frequency by Job Type (N=493)					
Job Type	**N**	**%**	**Job Type**	**N**	**%**
HEOR Generalist (health economics and health outcomes research)	145	29%	Epidemiologist	10	2%
Health Economist	87	18%	Therapeutic Area specialist (e.g. product team)	10	2%
HEOR Management or Administration	41	8%	Outcomes or Medical Liaison (field-based outcomes customer support)	6	1%
Health Technology Assessment	40	8%	Consultant	5	1%
Real World Evidence and Observational Study Specialist	35	7%	Communications/Medical Writing	5	1%
Patient Reported Outcome/Clinical Outcomes Assessment	28	6%	Clinical Trials	4	1%
Pricing, Access and Reimbursement	22	4%	Patient Representative	3	1%
Health Policy	18	4%	Medical Affairs	2	0%
Statistician or Statistical Analyst	16	3%	HEOR Education Specialist	2	0%
Practicing Physician, Nurse, Pharmacist, or other Clinician	11	2%	Other	3	1%

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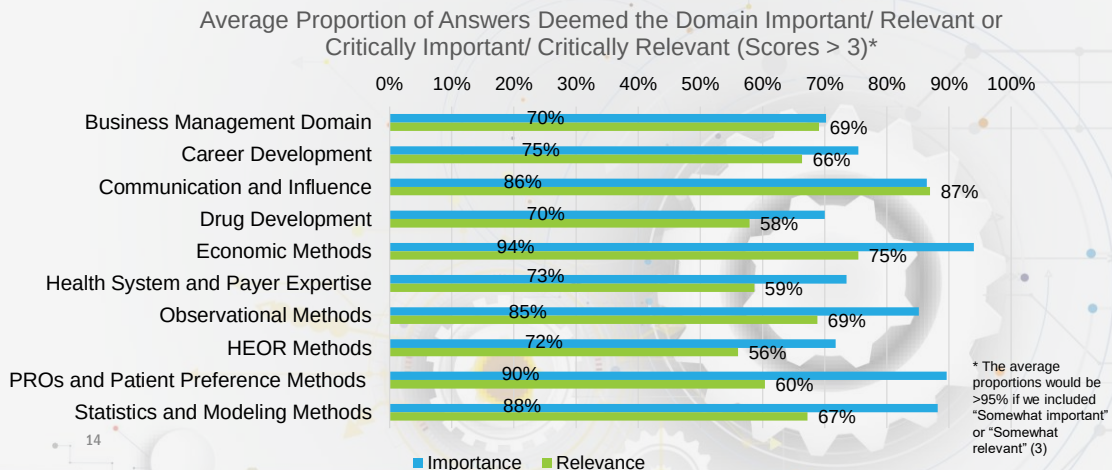
General Member Survey Results
Importance and Relevance of the Competency Domains



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General Member Survey
Top 10 Individual Competencies by Importance

Individual Competency	Proportion of answers "Important" or "Critically Important"
Health Economic Modeling	96%
Health Technology Assessment (HTA) Evidence Requirements & Development	95%
Statistics and Analytics	94%
Burden of Illness Analysis	94%
Prospective and Retrospective Observational Studies (Real-World Evidence)	93%
Pricing Reimbursement and Access	92%
Economic Analysis Alongside Clinical Trials	92%
Utility and Quality of Life Studies	91%
Systematic Literature Reviews	91%
Retrospective Claims Database Studies	90%

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General Member Survey
Top 10 Individual Competencies by Relevance

Individual Competency	Proportion of answers "Relevant" or "Critically Relevant"
Teamwork - Team Dynamics and Relationships	93%
Business acumen	89%
Presentation Development and Delivery	89%
Orientation Towards Solutions and Success	86%
Executive Communications	86%
Prospective and Retrospective Observational Studies (Real-World Evidence)	81%
Pricing Reimbursement and Access	81%
Scientific Medical Writing	80%
Health Technology Assessment (HTA) Evidence Requirements & Development	79%
Burden of Illness Analysis	79%

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Comparison of Relevance Across Job Types (aka Specialty Tracks?) (% Scores > 3)

Competency	HEOR Gnrlst	Health Econ	HEOR Mgmt	HTA	RWE
Assessment and Management of Vendors					74%
Burden of Illness Analysis	89%	84%			
Business acumen	94%	89%	98%	90%	94%
Customer Interactions and Relationships			93%		
Epidemiology, Including Pharmacoepidemiology Studies					80%
Executive Communications	88%	89%	98%	95%	
Health Economic Modeling		92%	88%	93%	
Health System Expertise (Regional and Affiliate Level) at the Payer Level			87%		
Health Technology Assessment (HTA)		90%	88%	98%	
Orientation Towards Solutions and Success	86%		100%	85%	83%
Patient Registries, Including Risk Evaluation Monitoring Studies					89%
Presentation Development and Delivery	92%	89%	95%	88%	
Pricing Reimbursement and Access	90%	84%	90%	88%	89%
Prospective and Retrospective Observational Studies (Real-World Evidence)	91%				97%
Retrospective Claims Database Studies	85%				94%
Scientific Medical Writing	89%	86%		83%	74%
Statistics and Analytics		82%			
Systematic Literature Reviews				83%	
Teamwork - Team Dynamics and Relationships	96%	86%	98%	90%	94%

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ISPOR HEOR Competencies Framework™

Academic (Faculty) Survey Results

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ISPOR 2018 Competency Surveys

- Academic Member (Faculty) Program Survey
  - Survey sent to 1191 ISPOR members who self-identified as "Academics"
  - Goal was to determine how the individual competencies *are* or *are not* covered in their degree programs
    - Courses
    - Research Experience
    - Advisement/Mentorship
    - Not Offered (i.e., it was not covered in any of the above)
  - 58 complete responses received (response rate = ~5%)

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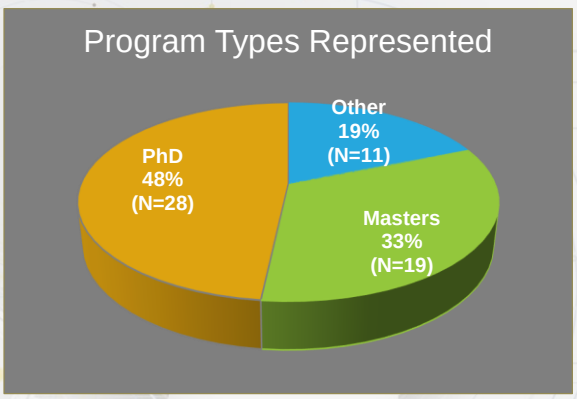
Academic (Faculty) Survey Results
Responses by Region and Program Type



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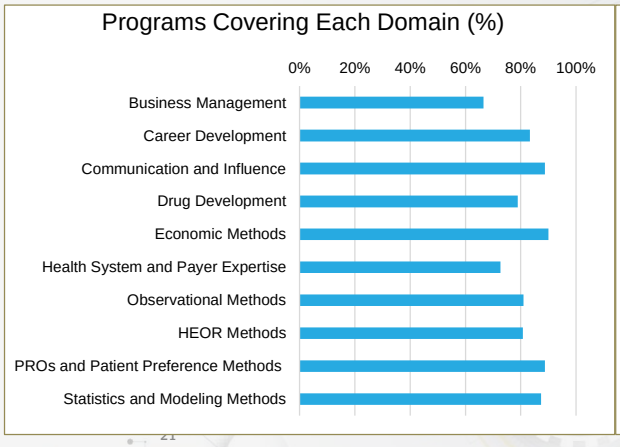
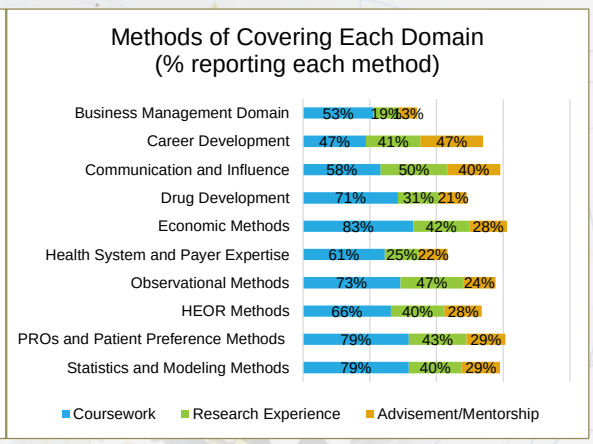
Academic (Faculty) Survey Results
Coverage of the Competency Domains





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Academic (Faculty) Survey Results of HEOR Programs
Most and Least Frequently Reported Individual Competencies

Top 10 Most Frequently Reported Competencies	
Presentation Development and Delivery	95%
Utility and Quality of Life Studies	95%
Scientific Medical Writing	93%
Bioethics & Human Subjects Rights and Protections	93%
Epidemiology, Including Pharmacoepidemiology Studies	93%
Systematic Literature Reviews	93%
Burden of Illness Analysis	91%
Statistics and Analytics	91%
Economic Analysis Alongside Clinical Trials	90%
Health Economic Modeling	90%

Top 10 Least Frequently Reported Competencies	
Assessment and Management of Vendors	36%
Customer Interactions and Relationships	48%
Business Operations, Including the Business Planning Process	55%
Patient Registries, Including Risk Evaluation Monitoring Studies	64%
Product Dossier (Global and Local)	64%
Pragmatic Studies	71%
Regulatory Activity & Review	71%
Drug Development Expertise	71%
Pharmacovigilance Analyses	72%
Program Evaluation	74%

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Academic vs General Member Comparison

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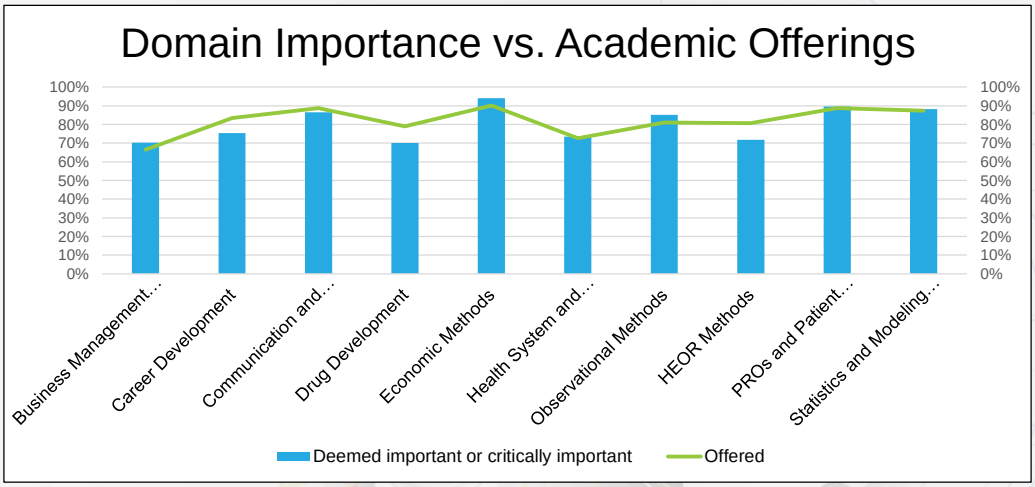
Competency Domain Importance vs Academic Offerings



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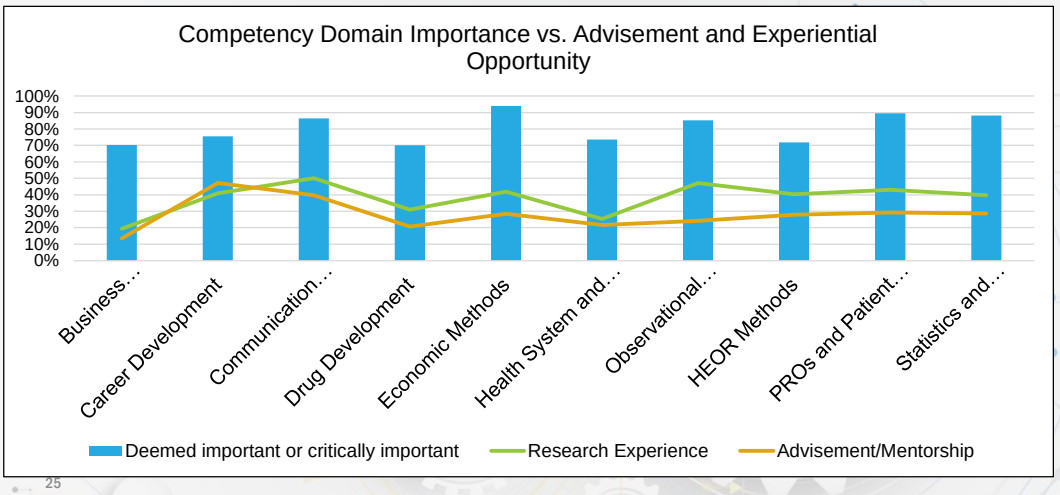
Competency Domain Importance vs Academic Offering through Advisement or Research Experience

Opportunities for Collaboration?



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Academic (Student) Survey

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ISPOR 2018 Competency Surveys

- Academic (Student Member) Program Survey
  - Survey sent to 1741 ISPOR members who self-identified as "Students"
  - Goal was to determine how the students *were exposed to* individual competencies
    - Required course/Elective course/Lecture
    - School-related research
    - School-related advisement/mentorship
    - Non-school related experience (e.g. part-time job, volunteer internship, etc.)
    - Non-school related advisement/mentorship
    - Not exposed
  - 88 complete responses received (response rate = ~5%)

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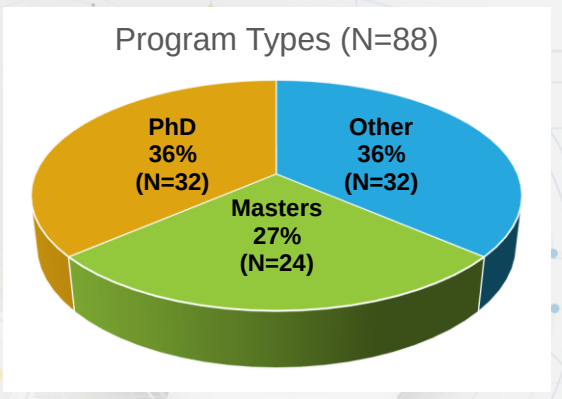
Academic Program (Student) Survey Results
Responses by Region and Program Type



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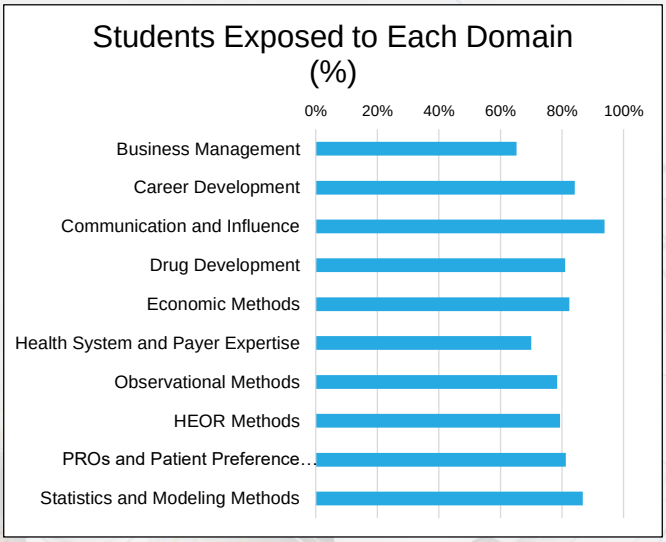
Academic Program (Student) Survey Results
Exposure to Competency Domains



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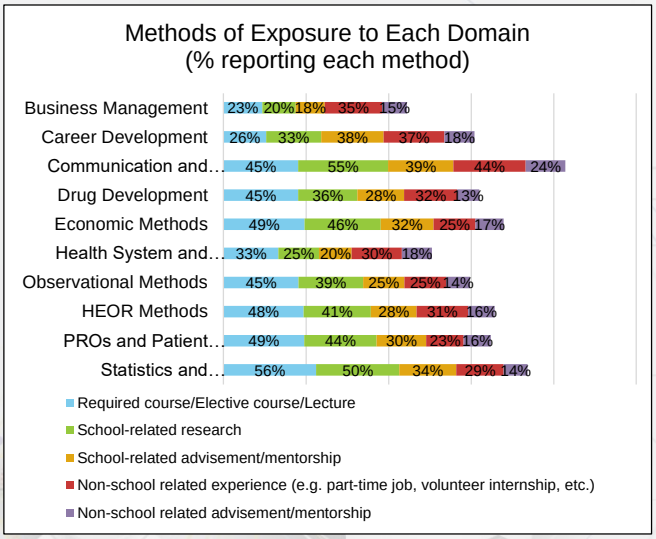
Academic Program (Student) Survey Results
Methods of Exposure to Competency Domains



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Student Survey Results
Most and Least Frequently Reported Individual Competencies

Top 10 Most Frequently Reported Competencies	
Presentation Development and Delivery	97%
Scientific Medical Writing	95%
Statistics and Analytics	95%
Teamwork - Team Dynamics and Relationships	94%
Systematic Literature Reviews	91%
Executive Communications	89%
Bioethics & Human Subjects Rights and Protections	88%
Clinical Trial Design and Implementation	88%
Career Development - Academia	86%
Qualitative Research	86%

Top 10 Least Frequently Reported Competencies	
Assessment and Management of Vendors	51%
Product Dossier (Global and Local)	59%
Business Operations, Including the Business Planning Process	59%
Marketing and Market Research	64%
Customer Interactions and Relationships	65%
Pragmatic Studies	66%
Pharmacovigilance Analyses	68%
Health System Expertise (Regional and Affiliate Level) at the Payer Level	68%
Global Understanding of Health Systems and HTA	69%
Patient Registries, Including Risk Evaluation Monitoring Studies	73%

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Faculty vs. Student Assessment of their Programs*

*** These are biased and cofounded comparisons since the sampling scheme for the respondent & programs was a convenience and non-matched sample from each individual survey**

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Academic and Student Survey Results
Least Frequently Covered Individual Competencies (non-matched)

Top 10 Least Frequently Reported Competencies (Ordered by Faculty)	Faculty Score	Student Rank	Student Score
Assessment and Management of Vendors	36%	1	51%
Customer Interactions and Relationships	48%	5	65%
Business Operations, Including the Business Planning Process	55%	2	59%
Patient Registries, Including Risk Evaluation Monitoring Studies	64%	10	73%
Product Dossier (Global and Local)	64%	3	59%
Pragmatic Studies	71%	6	66%
Regulatory Activity & Review	71%	14	75%
Drug Development Expertise	71%	11	74%
Pharmacovigilance Analyses	72%	8	68%
Program Evaluation	74%	16	76%
Global Understanding of Health Systems and HTA	74%	9	69%
Marketing and Market Research	78%	4	64%
Health System Expertise (Regional and Local)	82%	7	68%

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ISPOR HEOR Competencies Framework™

Conclusions and Next Steps

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Competency Importance vs Academic Offerings
Opportunities for Collaboration?

- In general, the Academic programs are a good match to the Importance of the competency to the HEOR discipline
- Our early conclusions are that great opportunity exists for collaboration with HEOR functions and Life Science companies to enable students to have:
  - Professional Mentors
  - Internships and Fellowships
  - Other Practical Experience
  - Innovative Programs (TBD)
  - Others (TBD)

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Next Steps

- Publish these results in a future issue of *Value in Health*
- Formalize specialty tracks
- Determine what topics should be covered in more detail within each competency and specialty track
- Engage:
  - Faculty Advisory Council
  - Student Network
  - Institutional Council
  - Education Council
  - General Membership
  - ISPOR experts in the various competencies and the various topics

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Recent Input from Faculty Advisors and Student Chapter Leaders

- Ideas to increase awareness at their universities (focus on strategies from faculty and upward to senior leadership)
- Ideas regarding novel approaches to addressing competencies and enabling students to get practical experience

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Next Steps

- Topic Development
  - Define each competency in greater detail by identifying the key topics to be understood and mastered within it
  - Assess the topics on the following 2X2 Grid

<Competency>	Technical	Strategic
Theoretical/ Didactic	(Topics)	(Topics)
Applied/Experiential	(Topics)	(Topics)

- Specialty Tracks – Determine which competencies are most critical within different job types

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Conclusions

- The General Member survey results provide validation of the *ISPOR Competencies Framework*™ to the HEOR discipline both in their importance and relevance
- The two Academic surveys results suggest agreement between the competencies and what is covered in academic programs, with some gaps
- The Framework will solidify ISPOR's leadership position and serve as a vehicle for building an effective HEOR workforce
- There is still much work to do but it will be undertaken with confidence that the final product will be valuable to ISPOR members and the associated companies and academic centers

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Appendix

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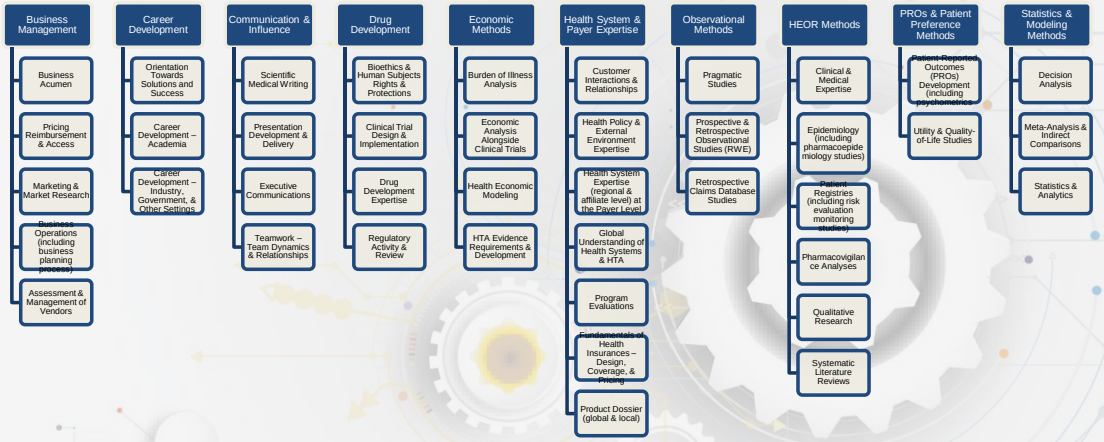
ISPOR HEOR Competencies Framework™

Competencies and Capabilities



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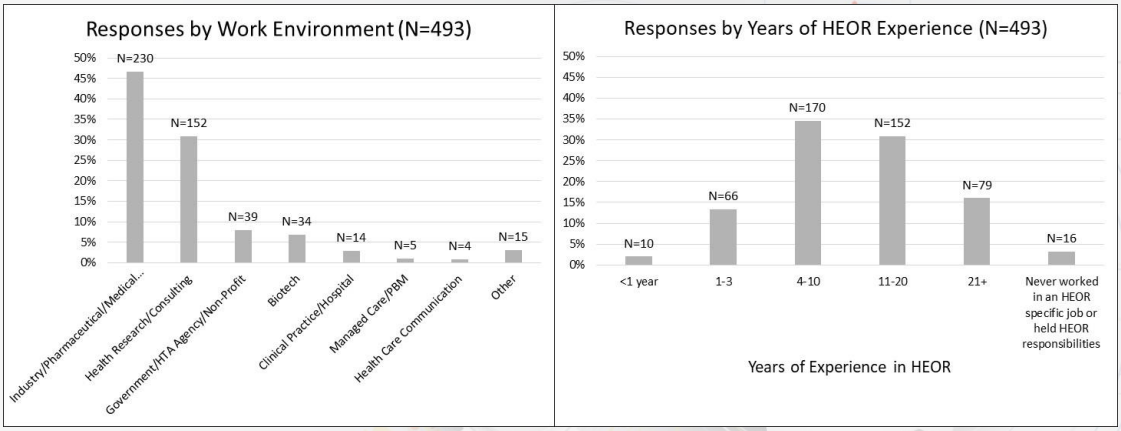
General Member Survey Results

Responses by Work Environment and Years of HEOR Experience



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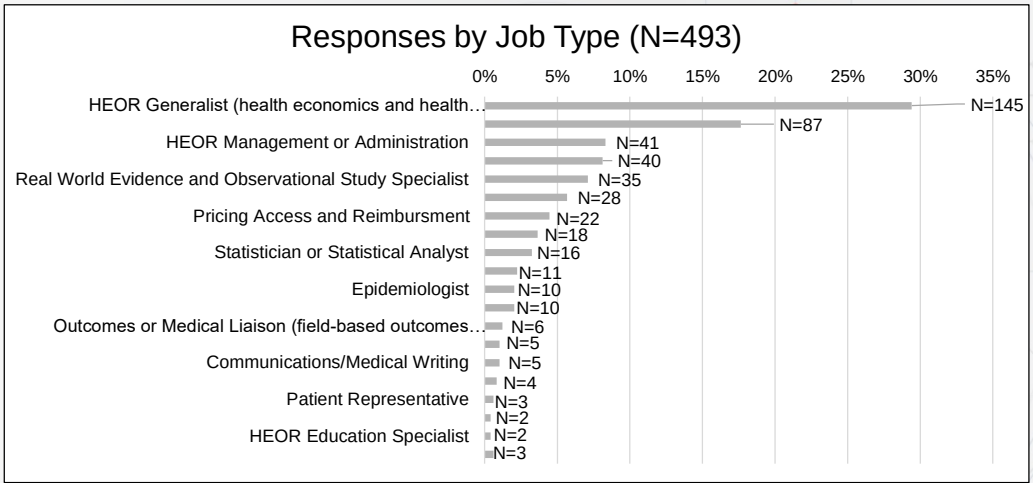
General Member Survey Results
Job Type of the Respondents



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General Member Survey
Top 10 Individual Competencies based on Relevance and Importance (by correlation)

Individual Competency	Pearson's Correlation between Importance and Relevance
Program Evaluations	0.618
Decision Analysis	0.600
Bioethics & Human Subjects Rights and Protections	0.576
Qualitative Research	0.575
Marketing and Market Research	0.573
Fundamentals of Health Insurances: Design, Coverage, and Pricing	0.570
Orientation Towards Solutions and Success	0.559
Business Operations, Including the Business Planning Process	0.557
Pragmatic Studies	0.548
Epidemiology, Including Pharmacoepidemiology Studies	0.532

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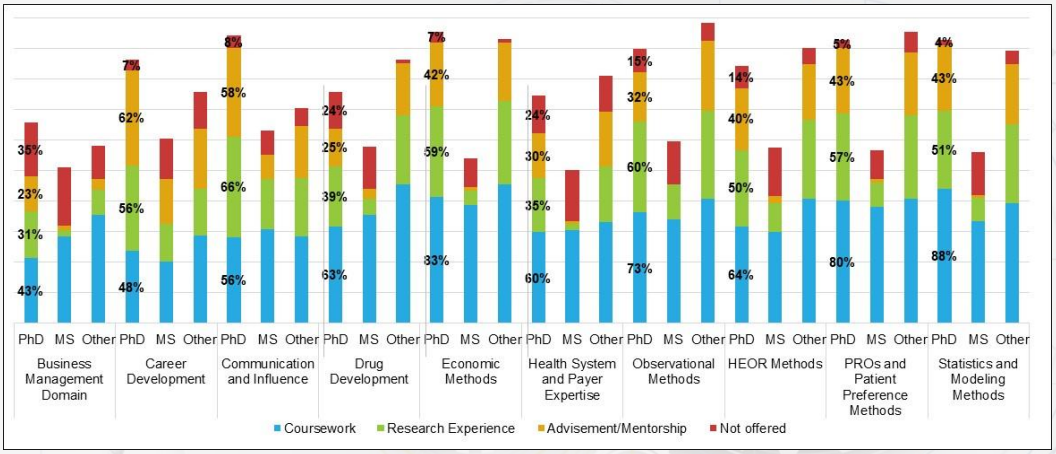
Academic (Faculty) Survey Results

Methods of Covering Competency Domains Across Different Types of Programs (PhD, Masters, Other)



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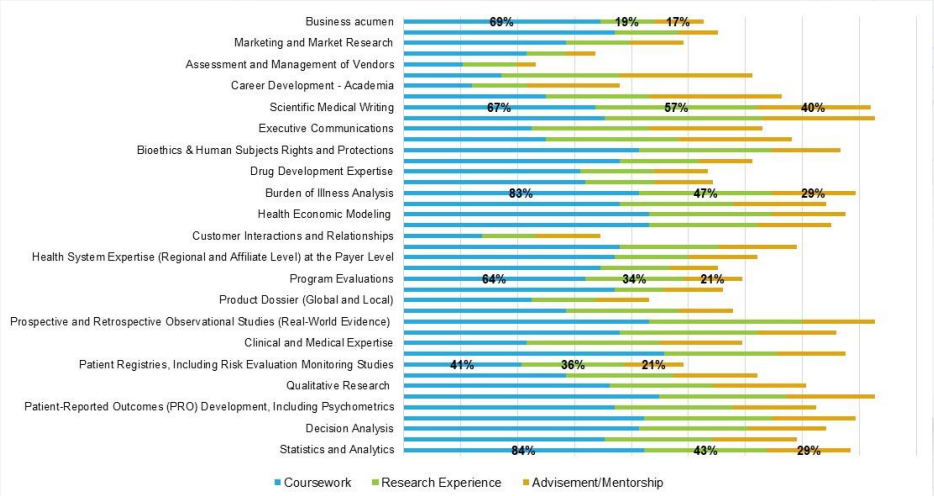
Academic (Faculty) Survey Results

Methods of Covering Individual Competencies



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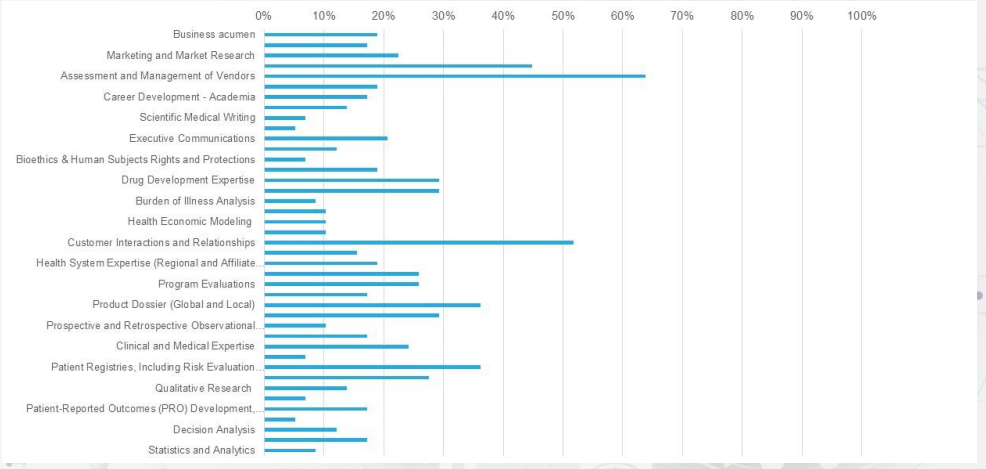
Academic (Faculty) Survey Results:
Individual Competencies NOT Reported as Covered



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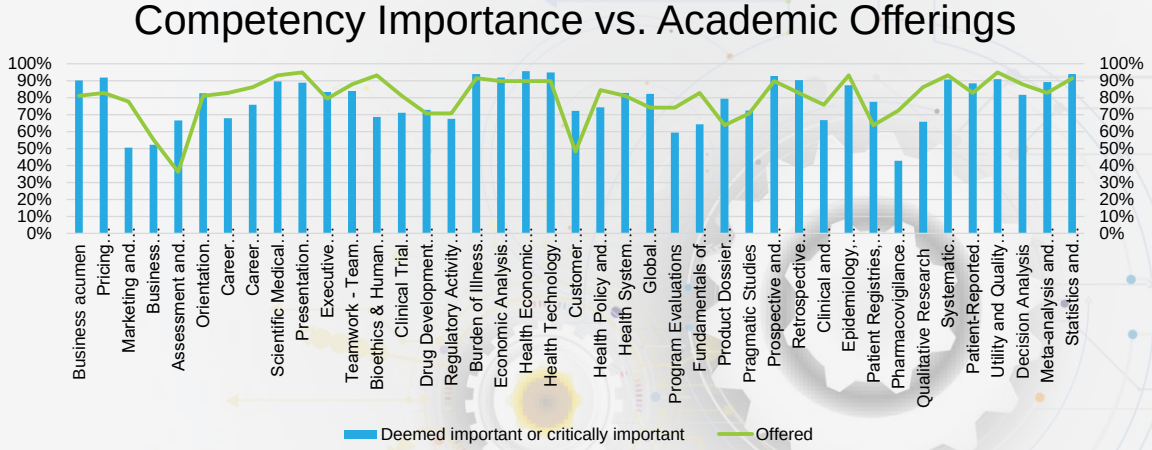
Individual Competency Importance vs Academic Offerings



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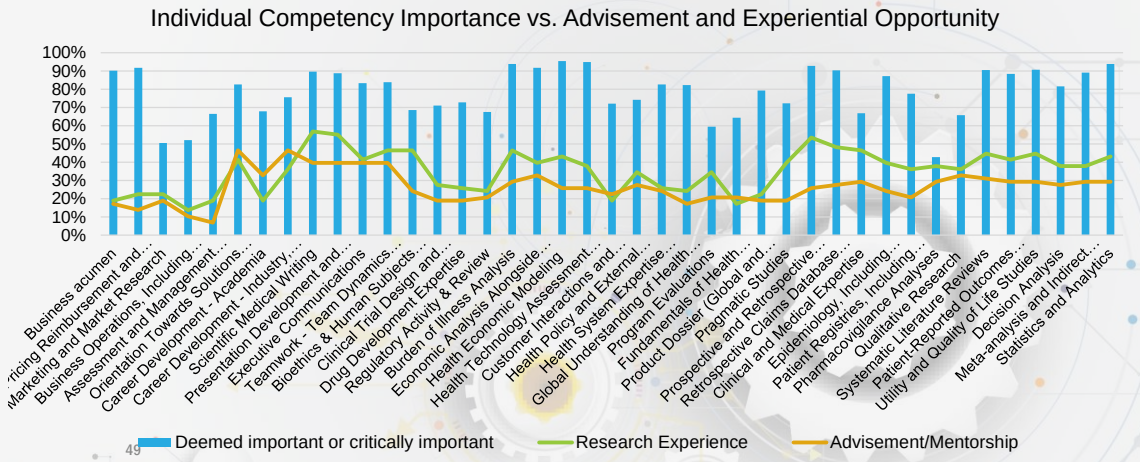
Individual Competency Importance vs Academic Offering through Advisement or Research Experience

Opportunities for Collaboration?



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Academic Program (Student) Survey Results

Frequency Distribution of Program Type by Years in Program

	Years in Program					
Program type	**1 year**	**2 years**	**3 years**	**4 years**	**5 years**	**Total**
PhD	11	10	5	3	3	32
MS	14	7	2	1	0	24
Other	10	6	6	5	5	32
Total	35	23	13	9	8	88

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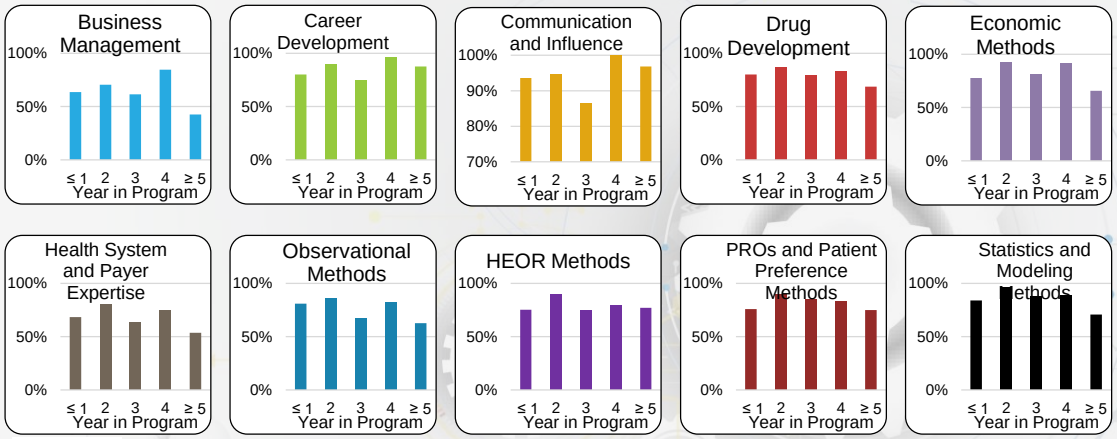
Academic Program (Student) Survey Results
Exposure to Competency Domains by Year in Program



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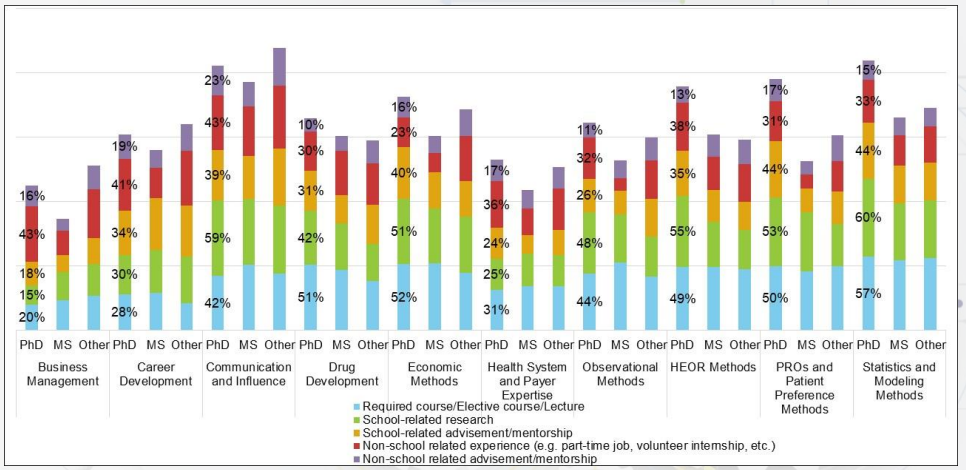
Academic Program (Student) Survey Results
Methods of Exposure to Competency Domains Across Different Types of Programs (PhD, Masters, Other)



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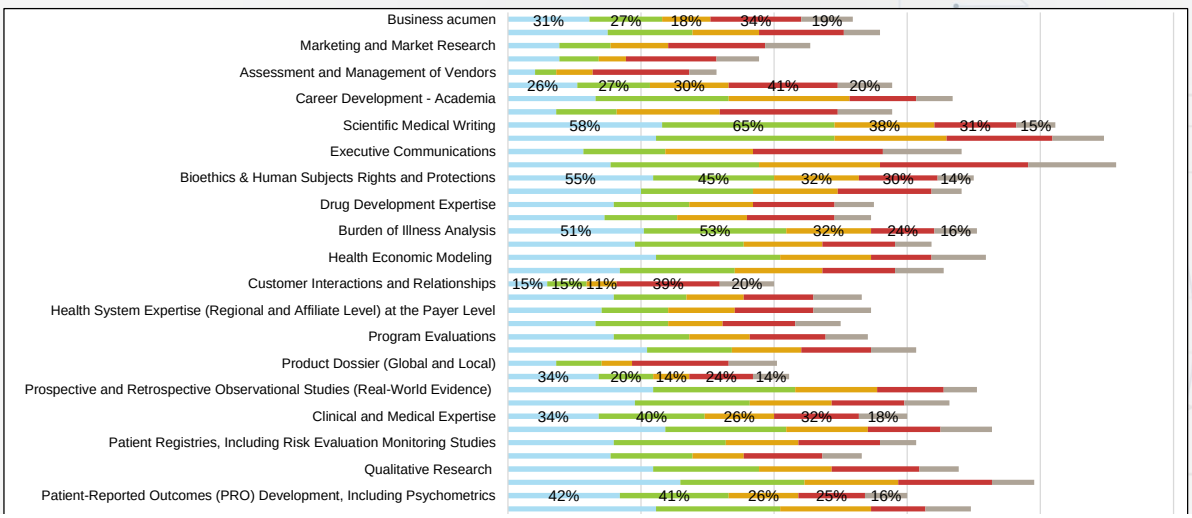
Academic Program (Student) Survey Results
Methods of Exposure to Individual Competencies



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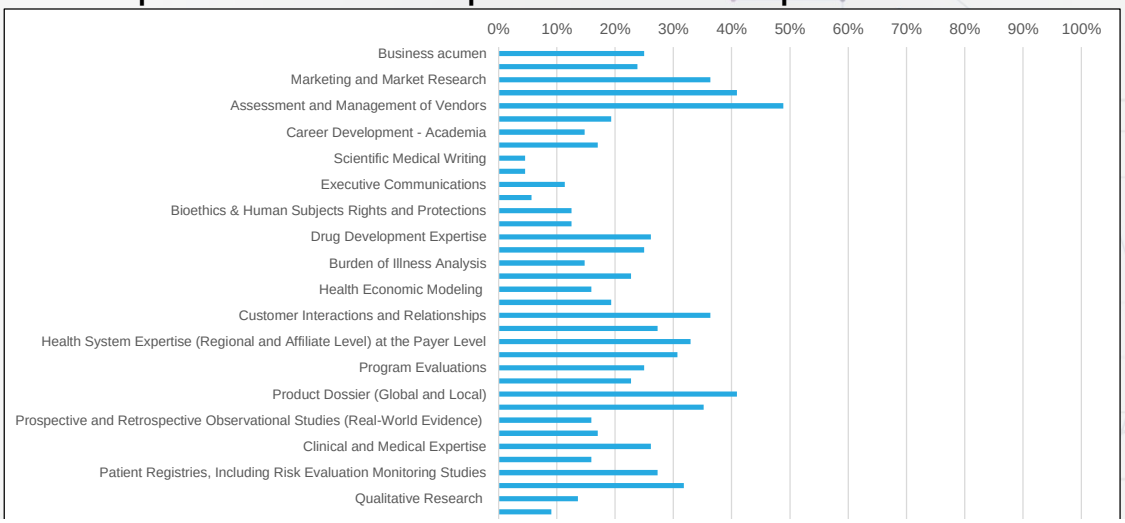
Academic Program (Student) Survey Results
Proportion of Student NOT Exposed to Individual Competencies



ISPOR, the professional society for health economics and outcomes research (HEOR), is an international, multistakeholder, nonprofit dedicated to advancing HEOR excellence to improve decision making for health globally. The Society is the leading source for scientific conferences, peer-reviewed and MEDLINE-indexed publications, good practices guidance, education, collaboration, and tools/resources in the field.

ISPOR's community of more than 20,000 individual and chapter members from 120+ countries includes a wide variety of healthcare stakeholders, including researchers, academicians, regulators and assessors, public and private payers, healthcare providers, industry, and patient representatives. The Society's leadership has served as an unbiased resource and catalyst for innovation in the field for more than 20 years.

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