



AVALON HEALTH ECONOMICS

# Avalon Health Economics HEOR Capabilities

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# Company Overview

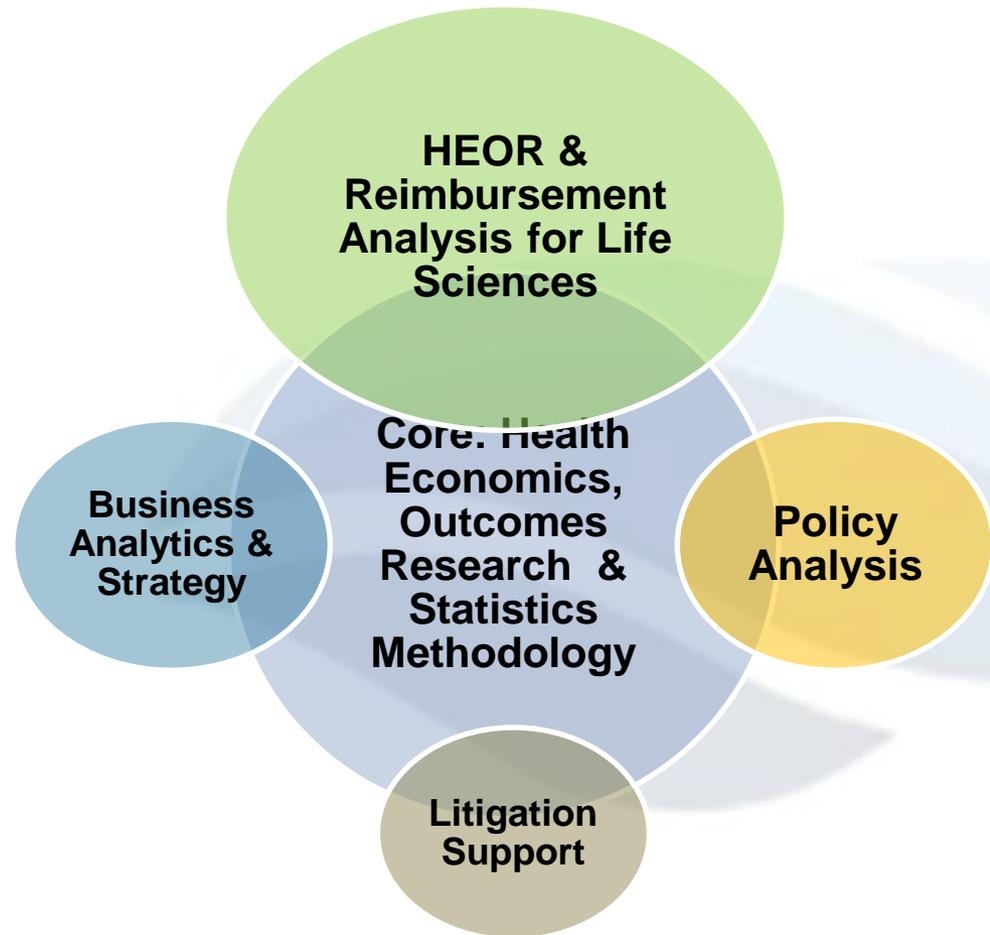
- Avalon Health Economics LLC (“AHE”) was formed by a group of experienced academic and industry health economists and associates, bringing together several existing consulting practices.
  - All three AHE Principals— John Schneider, Cara Scheibling, and Andrew Briggs, and Associate Robert Ohsfeldt-- worked together as part of Oxford Outcomes from 2009-2013. Schneider & Ohsfeldt worked together since 2004 after starting the Health Economics Consulting Group (HECG), which merged with Oxford in 2009. Thus, the core of AHE has a long and productive work history together.
- We are small and focused, and provide high-value real-world health economics consulting and research services relying on unparalleled industry knowledge and experience, accurate and defensible research, and attentive project management.
  - Focus: Full spectrum of health economics & outcomes research (HEOR) services, with special focus on economic modelling, modelling alongside clinical trials, study design, novel uses of clinical data, and real-world evidence



# Avalon Scope of Services

Our main focus is Health Economics and Outcomes Research (HEOR) for medical device and pharmaceutical industry clients, but we also provide related services in policy analysis, litigation support, and business analytics & strategy.

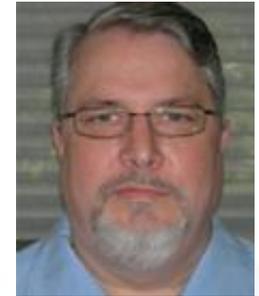
The “core” linking these activities is our strong base in HEOR **methodology, statistics, and data analysis**, and our proven track record in communicating research in the form of reports and published peer-reviewed articles



# Core Team

## Core Leadership

John Schneider, PhD  
Cara Scheibling, BA  
Andrew Briggs, DPhil  
Ivana Stojanovic, MA  
Robert Ohsfeldt, PhD



## Supporting Team

Anjani Parikh, MPH  
Katherine Dick  
Noemi Kiss, MSc  
Nicole Nelson, BS  
James Robinson, PhD  
Pengxiang Li, PhD  
Philipp Schuetz, MD, MPH



- We have **10** core experienced staff dedicated to leadership, project management, and analysis.
- In addition, we are backed by panel of another **10** experienced economists, statisticians, and consultants with extensive industry and academic experience in outcomes research, health care, medicine, epidemiology, statistics, economics, business, and law



# Focus on Avalon HEOR Leadership



**John Schneider, PhD** – Leader in applied HEOR and building of HEOR analytic teams. Co-author (with Avalon Director Robert Ohsfeldt) of the book “The Business of Health”



**Andrew Briggs, DPhil**- Leader in HEOR methodology & HTA, leader within ISPOR. Co-author of the popular HEOR book “Decision Modelling for Health Economic Evaluation”



**James Robinson, PhD**- Leader in US health economics & HEOR & US payer coverage decisions. Author of the book “Purchasing Medical Innovation: The Right Technology, for the Right Patient, at the Right Price”



**Robert Ohsfeldt, PhD**- Leader in US health services research, HEOR, and real-world data analysis. Co-author (with Avalon CEO John Schneider) of the book “The Business of Health”



# Capabilities: Avalon Scope of Services Along the Product Development Lifecycle

Avalon’s services include a wide variety of offerings across the product development continuum in pharmaceuticals, diagnostics, and medical devices.



## EARLY ANALYSIS

- Clinical studies
- Market sizing
- Epidemiology
- Cost-of-Illness studies
- Conceptual models
- Return on investment
- Likely ‘to-market’ issues
- Literature reviews
- Systematic reviews
- Meta-analysis
- Payer research

## CORE ANALYSIS

- Clinical studies
- Cost-effectiveness
- Budget impact analysis
- Hospital value analysis
- Cost impact analysis
- Payer research
- Payer choice models
- Patient-reported outcomes
- Social media sentiment
- Publications
- Conference presentations
- Communications
- Value dossiers

## MARKET ANALYSIS

- Regulatory studies
- Market access
- Pricing & reimbursement
- Payer research
- Payer engagement
- Payer choice models
- Real-world data analysis
- Publications
- Conference presentations
- Communications
- Value dossiers



# Types of Clients & Engagements

## Pharmaceuticals

- Examples include Eli Lilly, Genentech, Meda, Amgen, Pfizer, Merck, Novartis, Helsinn, GSK, BMS, Astra Zeneca, Boehringer Ingelheim, Vertex, Tesaro, and Acucela.
- We have also worked with a number of smaller biotechnology companies.

## Medical Devices & Diagnostics

- Examples include Abbott Diagnostics, Teleflex, Terumo, Olympus, Medtronic, CVRx, Hygieia, Checkpoint Surgical, BioMerieux, Inflammatrix and Boston Scientific.
- We have also worked with the Coulter Foundation on early-stage development of novel devices

**Rx**

Project planning, systematic reviews, meta-analyses, conceptual models, building CEA into trials

Cost-effectiveness models, budget impact models, HTA submissions, value dossiers, communication tools, publications

**Dx**

Project planning, systematic or comprehensive reviews, meta-analysis, study design

Cost-effectiveness analysis, hospital value analysis, cost-impact modelling, communication tools, publications



# Areas of Specific Expertise

**Avalon has experience across most therapeutic areas, and has conducted a wide variety of studies of pharmaceuticals and medical devices**

## Pharmaceuticals

- Extensive experience across a wide range of therapeutic areas, including oncology, diabetes, COPD, CHF, cardiology, orthopedics, rare and orphan diseases, ophthalmology, dermatology, asthma, respiratory infections, infectious diseases, gastroenterology, and many others.
- Extensive participation in ISPOR methodology workgroups (e.g., Task Force on Modelling Methods)
- Extensive participation on HTA panels and Advisory Boards

## Medical Devices & Diagnostics

- Avalon has developed specific expertise in the economics of diagnostics, and has been regularly teaching the course “The Economics of Diagnostics” at the annual ISPOR meetings
- Development of cost-impact and hospital value models for presentation to health system supply chain purchasers
- Design of health economics elements in clinical studies
- Payer and purchaser research



# Examples of how our HEOR consulting has helped our Pharmaceutical clients:

- **Built numerous economic models of pharmaceuticals across a wide range of therapeutic areas**
  - ✓ Models designed for European HTA, including NICE
  - ✓ Models designed for U.S. markets & included with AMCP dossiers
  - ✓ Helped advance the literature on economic modeling methodology (e.g., modeling alongside clinical trials; dealing with uncertainty; optimal model design; etc.)
- **Advised clients on study design, statistical analysis plans, & data analysis strategies**
  - ✓ Development of HEOR measures (e.g., patient-reported outcomes; measures of resource use) for planned clinical studies
  - ✓ Assessment of statistical analysis plans and data analysis strategies
- **Special projects**
  - ✓ Optimal design of outcomes-based contracts
  - ✓ Exploration of disease causality using Mendelian randomization
  - ✓ Regression analysis of clinical trial data to assess confounding factors for EQ5D scores



# Examples of how our HEOR consulting has helped our Medical Device clients:

- **Alternative solution to bariatric surgery**
  - ✓ Assess coverage & reimbursement issues
  - ✓ Generate economic evidence to support reimbursement
- **Neuromodulation device for reversing heart failure**
  - ✓ HEOR evidence plan contributed to their \$92 million fund raising round
  - ✓ CMS approved our health economics data collection plan for reimbursement purposes
  - ✓ Helped increase clinical trial enrollment with our HEOR evidence
  - ✓ Currently building a economic models to support reimbursement, marketing and sales efforts
- **Coronary artery disease and early heart failure diagnostic test**
  - ✓ Developed HEOR evidence for securing reimbursement, market access and a drug partnership for all indications
  - ✓ Generation of white papers, reports, manuscripts, & conference abstracts
- **Large visualization diagnostic devices manufacturer**
  - ✓ Help develop HEOR capability in-house; generate background & training materials
  - ✓ Analysis of Medicare claims data
  - ✓ Development of economic models of laparoscopic vs. robotic surgery
  - ✓ Generation of white papers, reports, manuscripts, & conference abstracts



# What Makes Avalon Different?

## Four ways in which Avalon differs, and will always differ, from other HEOR vendors:

1. Academic and methodological strength. Our Principals and Directors have deep knowledge and experience in the academic side of economic valuation. Academic rigor is increasingly important as payers and purchasers raise their standards and expectations for economic evidence
2. Again, unlike some of the larger HEOR vendors, our senior staff members (including Project Directors and Senior Consultants) are materially and regularly involved with all projects.
3. We are small and will remain smaller than our competitors. Our Principals & staff have worked at larger firms, and we understand some of the problems associated with “big box” vendors. Avalon is a small “boutique” firm, with exceptionally experienced & qualified leaders who want to be involved in all of the work.
4. Avalon steadfastly focuses on three simple management & operational principles: **Pay attention** to the client and their needs; **Keep it simple**; more complex solutions are not always the ones that deliver the most value to our clients; **Focus on the audience**— developing “cookie cutter” approaches to value stories is not always the best approach



# Offices, Market Coverage, & Contact Information

## United States

- **New Jersey:** Our main offices are located in Morristown, NJ (26 Washington St.), within a one-hour train ride from New York City. We are located in the heart of New Jersey's vibrant pharmaceutical and medical device industry, and within easy reach of the lively life science industries in neighboring New York, Pennsylvania & Connecticut.
- **Other US Locations:** Avalon Director James Robinson is based in San Francisco & Berkeley, CA, and offers west-coast capabilities. Avalon Director Robert Ohsfeldt is based in College Station, TX, and offers capabilities in the south and Midwest.

## Outside of U.S.

- **Europe:** Avalon Director Andrew Briggs provides deep experience in UK HTA and HTA in other European countries. Avalon Clinical Director Philipp Schuetz is located in Basel, Switzerland, and Health Economist Noemi Kiss is located in Vienna, Austria.
- **Global:** Other Avalon associates and Senior Consultants are located in China, Chile, & GCC countries.

***Main contact information for all inquiries:***

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