

-- Overview --
**Current DRI Framework
and Issues Raised**

Christine Taylor, PhD, RD

Institute of Medicine

September 18-20, 2007

Overview

- Broad sweep of highlights
- **Framework** can be outlined from several sources
- **Issues** pulled from informal/formal venues:
 - 2004 FNB Symposium
 - EB Sessions
 - Study Committee Chairs' Survey
 - Canadian Fed Biological Societies
 - Appendix to contract with workshop sponsors

DRI Framework

Steps/Principles for DRI Development

Articulated in a general way:

- 1994 Publication
 - “How Should the RDAs Be Revised?”
- 1997 1st volume
 - Calcium, Phosphorus, Magnesium, Vit D, Fluoride
- 1998 Description of upper level approach
 - “Risk Assessment Model for Establishing ULs for Nutrients”
- 2006 Essential Guide to DRIs

DRI Framework

Steps/Principles for DRI Development

- Fleshed out through experience
Including the 'experience' of limited data
- Revisit principles and approaches after being informed by experience

Basic Components of Current DRI Framework

I. Conceptual Underpinnings

- - What are the DRIs? (*'Problem Formulation'*)
- - How are the DRIs 'set up'?

II. Road Map for Development

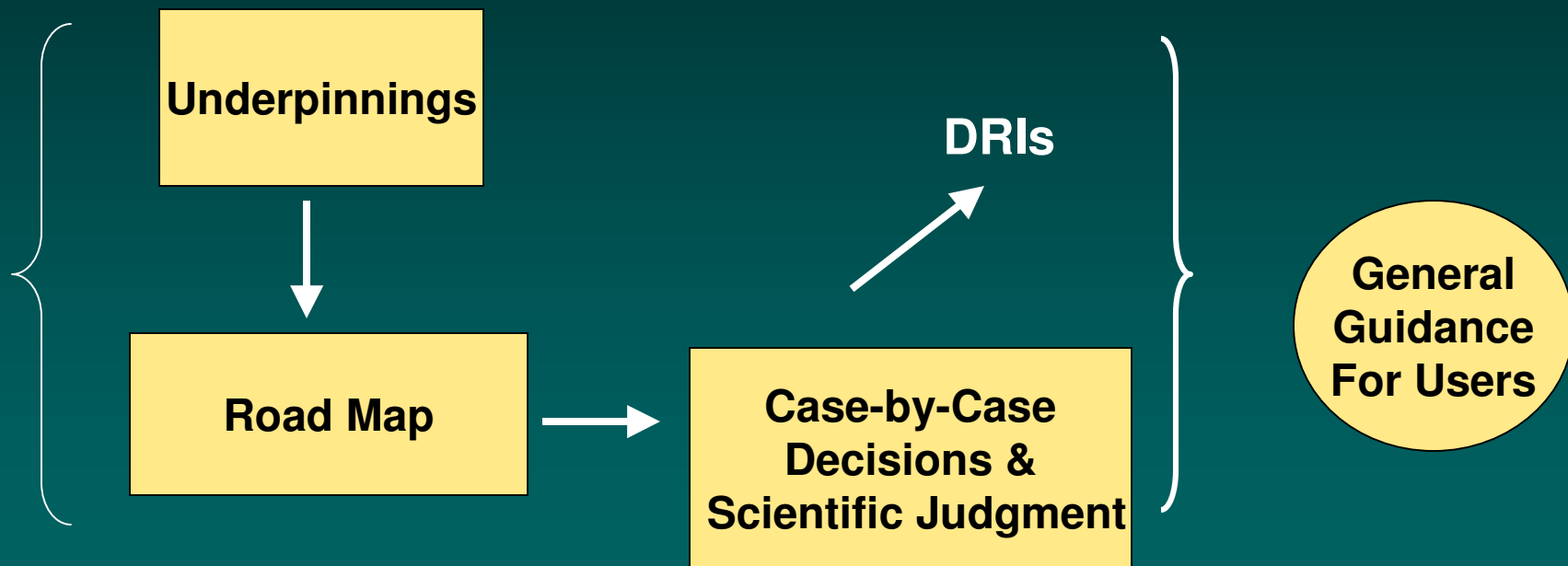
A Guide for Committees: Identifying, Linking and Interpreting Relevant Data; Steps for Decision-Making and Judgment

- - How do we do it?

III. General Guidance for Users

- - How do we help people understand / use the values?

Framework Schematic



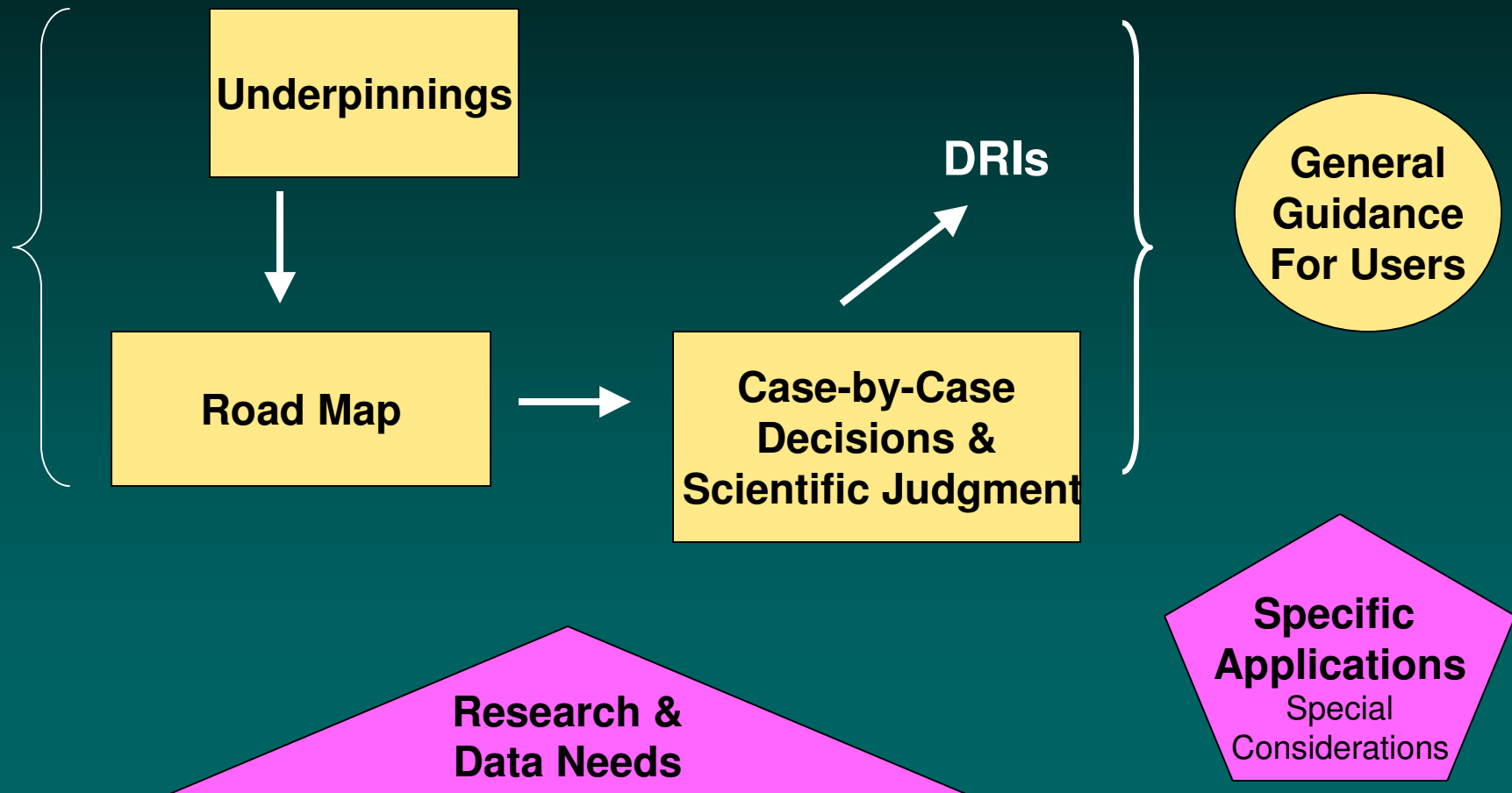
Workshop Agenda & Discussion of Issues

- Organized by framework
- Sequential sessions “move through” the framework as outlined

4 Workshop Sessions

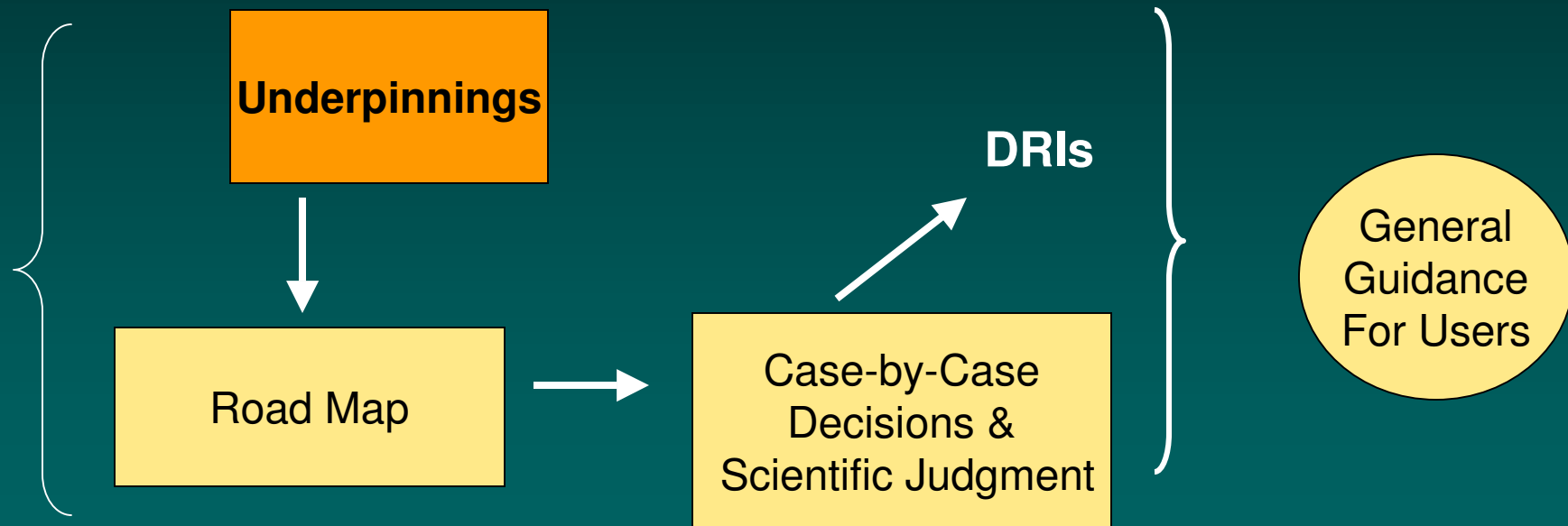
Session 1	<ul style="list-style-type: none">- Conceptual Underpinnings- Road Map
Session 2	<ul style="list-style-type: none">- Road Map (6 specific issues)
Session 3	<ul style="list-style-type: none">- General Guidance for Users
Session 4	<ul style="list-style-type: none">- Looking Toward the Future

Some DRI Activities Outside Scope of Workshop



Conceptual UNDERPINNINGS

FRAMEWORK



Underpinnings

- What are the DRIs?
 - What's their purpose?
 - What are they used for?
- How are the DRIs set up?
 - Specify the kinds of values to be expressed
 - Specify the “basis” for the values
 - What are the types of endpoints?
 - Specify the nature of substances appropriate for DRI development

Underpinnings...Existing Framework

What are the DRIs?

[1994] Standards to serve as a goal for good nutrition

For use with **groups of healthy persons**

Desirable to explore ways to evaluate **individuals**

- **[1997-2006] Reference values that can be used for *planning and assessing* diets for healthy populations/people and for many other purposes.**

Underpinnings...

Issues Raised

- **Does this remain the general purpose of the DRIs?**
 - i.e., **Standards for planning and assessing healthy groups and individuals?**

Related Issue: Meaning of “healthy”

Underpinnings...Existing Framework

Values to be Expressed

By 1989, RDA value alone did not meet all needs

1994 foreshadowing DRI as a set of values

- EAR → RDA
- UL

1997+ Activities

- Added AI and AMDR

Underpinnings...

Issues Raised

- Do EAR / RDA / UL continue to be the desirable values to provide?
- Is the AI useful and needed? Should we fully incorporate and better define the AI?
- Does AMDR pave the way to considering macronutrients using a different approach?

Underpinnings...Existing Framework

Types of Endpoints

1. Endpoint to ensure “Adequacy”

- Non-chronic Disease Endpoint --or--
- Chronic Disease Endpoint

2. Endpoint to avoid “Excess”

- Non-chronic Disease Endpoint --or--
- Chronic Disease Endpoint

Underpinnings...

Issues Raised

- Continue to include reduction of chronic disease risk as endpoint option?
- Explore option of DRI values for multiple endpoints rather than selecting one endpoint?
 - For an age/gender category: Establish DRI values for various endpoints of interest -- Users can select their preferred endpoint?
- [Approaches for selecting endpoints: Road Map / Session 2]

Underpinnings...Existing Framework

Substances for DRIs

Historically: “Essential” or Classic Nutrients

- Vitamins, minerals, protein/fat/CHO/energy

More recently → Compounds found naturally in foods

- Do not meet traditional definition
- Potential risk or possible benefit to health
 - Fiber, cholesterol, saturated fat

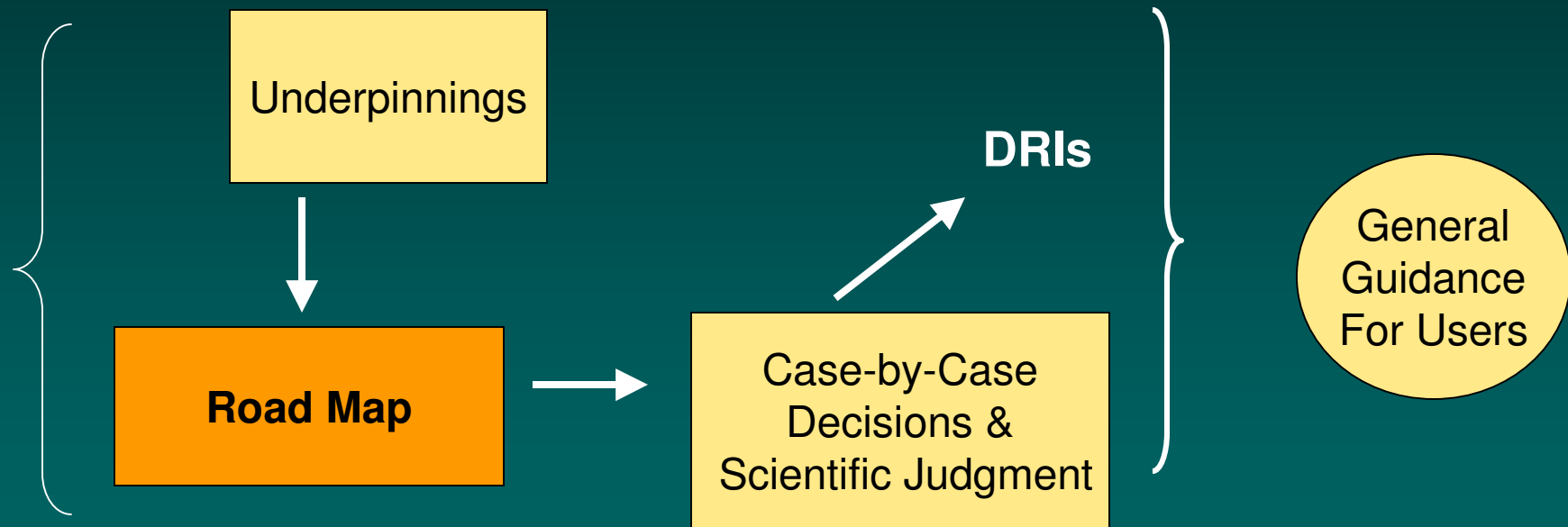
Underpinnings...

Issues Raised

- Should the focus of DRIs continue to expand beyond classic nutrients?
- Is a modified DRI approach needed to address macronutrients and non-“essential” nutrient substances?
 - Given that DRIs provide a (quantitative) basis for food-based dietary guidelines, how should interest in DRI values for nutrient substances important to health be addressed?

ROAD MAP

FRAMEWORK



Road Map....

How Do We *Do* It?

- Tasks/decisions to develop specific DRIs
 - Guiding principles for committees
 - The “nuts and bolts” of the framework

Theme Sounded: Much work to be done

Road Map...

Issues Raised

- Can we provide more specific guidance overall for study committees' scientific decision-making?
 - Assist with clarifying key concepts and tasks
 - Promote consistency across study committees
- Can we provide guidance for scientific judgment in the face of limited data?

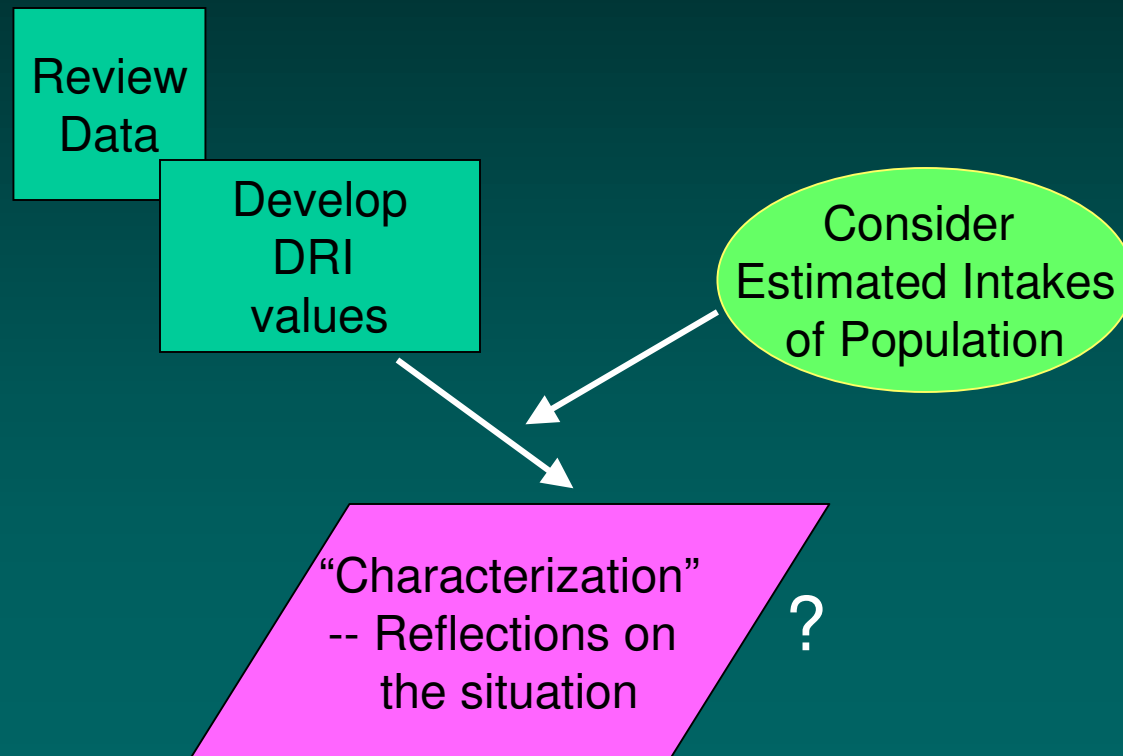
Road Map...

Issues Raised

- What is role of systematic evidence-based reviews?
- Can we specify an “Organizing Scheme”?

Apparent Organizing Scheme

What are Tasks/Decisions for Committees?



Road Map...

Issues Raised

- Can we specify an “Organizing Scheme”?
 - ? Agreed-upon general steps
 - ? Enhancement of “contextual discussion” or “characterization” step
 - Reflections on the situation and context*
 - Discussion of uncertainty and precision of values
 - Comparing values and current estimated intake
 - ? Link between scheme for adequacy and scheme for upper levels
 - Can these types of committees be combined?

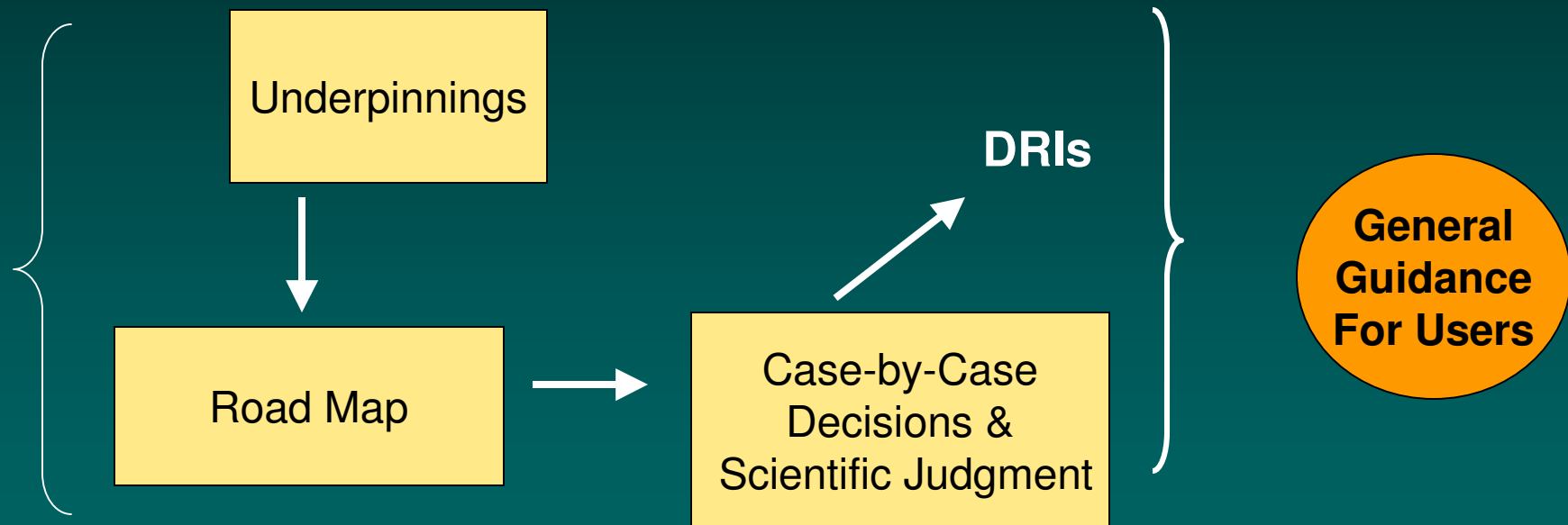
Issues Raised

Specific Road Map Tasks

- Selection of Endpoints
- Dose-Response Approximation
- Extrapolation/Interpolation
- Adjustment for Data Uncertainty
- Estimation of Dietary Intake
- Other: Environmental/Genomic/Physiological

GENERAL GUIDANCE FOR USERS

FRAMEWORK



General Guidance for Users

- Focus → IOM Publications
 - 2001: *Applications in Dietary Assessment*
 - 2003: *Applications in Dietary Planning*
- Outlines general approach for using the DRI values
 - Linked to existing purpose of DRIs – To plan and assess dietary/nutrient intakes for groups and individuals

Guidance for Users....

Issues Raised

2 Categories (terminology?):

- Issues Relevant to Sessions 1 & 2
“Underpinnings and Road Map”
- Issues Relevant to Session 3 “General
Guidance for Users”

-- Footnote to Underpinnings & Roadmap -- Issues from “Users” Background Papers

- Adequate Intake (AI)
 - Concerns about AI definition and the differences in the approaches used to develop AIs
- Concerns about relevance of UL to total diet
- Endpoints
 - Concerns about consistency and criteria selecting of endpoints
- “Characterization” / Reflections on context
 - Indication of uncertainty surrounding DRI values (vs. value as a range)
 - Discussion of match between DRI values and current estimated intake
 - Discussion of likely versus unlikely public health consequences of too little or too much
- Use of DRIs with diseased populations

Guidance for Users....

Issues Raised

Session 3

- Difficulty in understanding DRIs
 - More clarity on intended uses
 - More ‘practical’ guidance
 - More guidance on use with individuals
 - More tools, such as software
- Guidance on incorporation of AI, especially within context of total diet
- Seeking clarity on groups versus individuals, small vs large groups, and related

Link to Agenda

Underpinnings & Road Map

DAY 1	
10:00	Current Framework for DRI Development: Pros and Cons
10:40	2 Case Studies
11:50	2 Perspectives
1:30	Application of Systematic Evidence-Based Review Approaches
1:45	Risk Assessment: Is It a Relevant Organizing Structure?
DAY 2 morning	
8:30	Selecting Endpoints
9:00	Dose-Response Data
9:30	Extrapolation/Interpolation
10:30	Adjustments for Data Uncertainty
11:00	Estimating Dietary Intake
11:30	Other Factors: Physiological, Genomic, Environmental



Underpinnings



Road Map

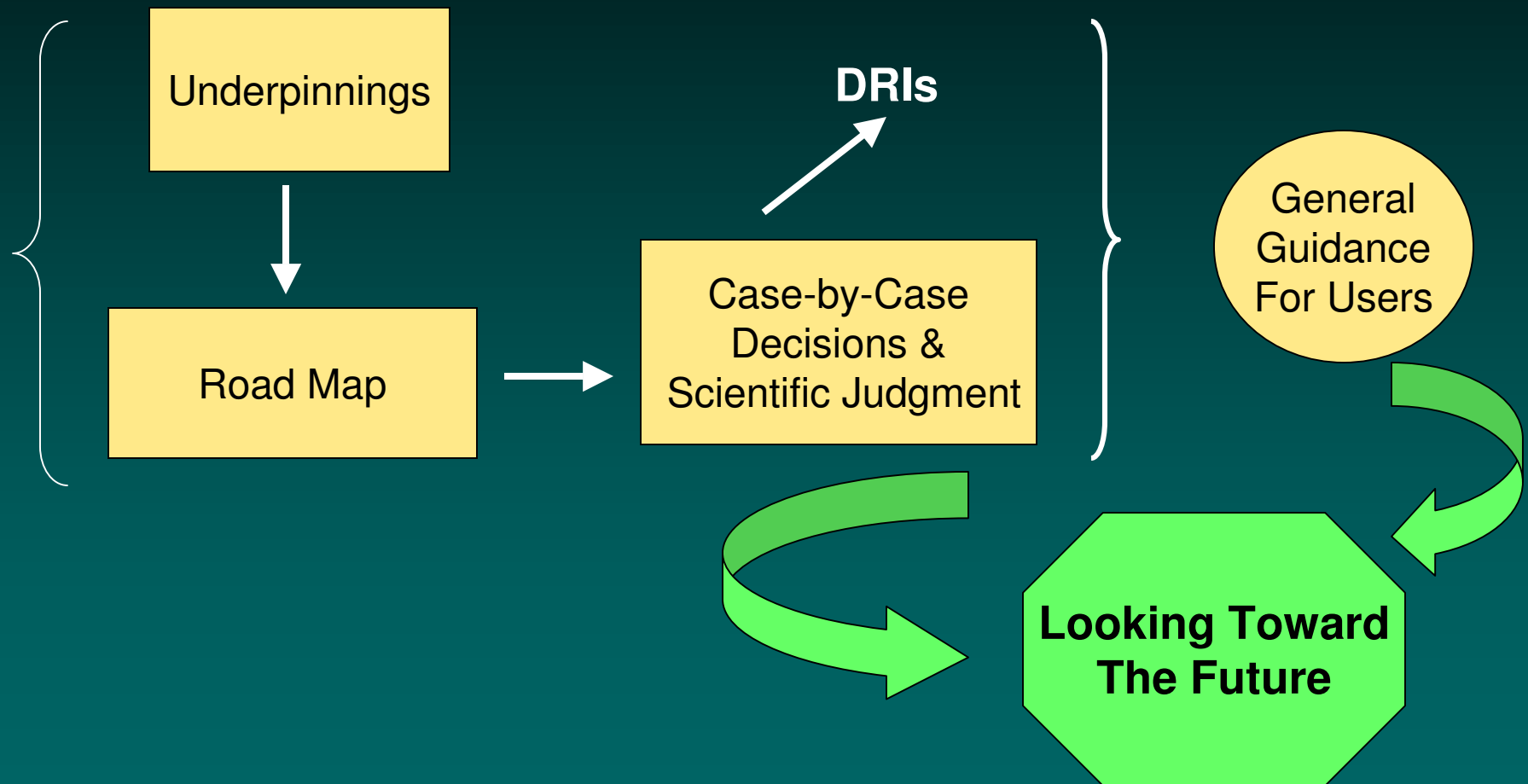
Link to Agenda

General Guidance for Users

DAY 2 afternoon	
1:00	Overview and Discussion of Issue/Options
1:40	Special Focus: Planning and Assessing in Context of Total Diet
2:45	Special Focus: Framework for Individual-level and Group-level Applications



The Future: Session 4



Looking Toward the Future....

Issues Raised

- Criteria for updating/reviewing DRIs
- Determining “new” nutrient substances for DRI review
- Options for stakeholder input
- Enhancing transparency of decision-making process
- New issues that may emerge

We look forward
to the workshop discussions !!
Thank You