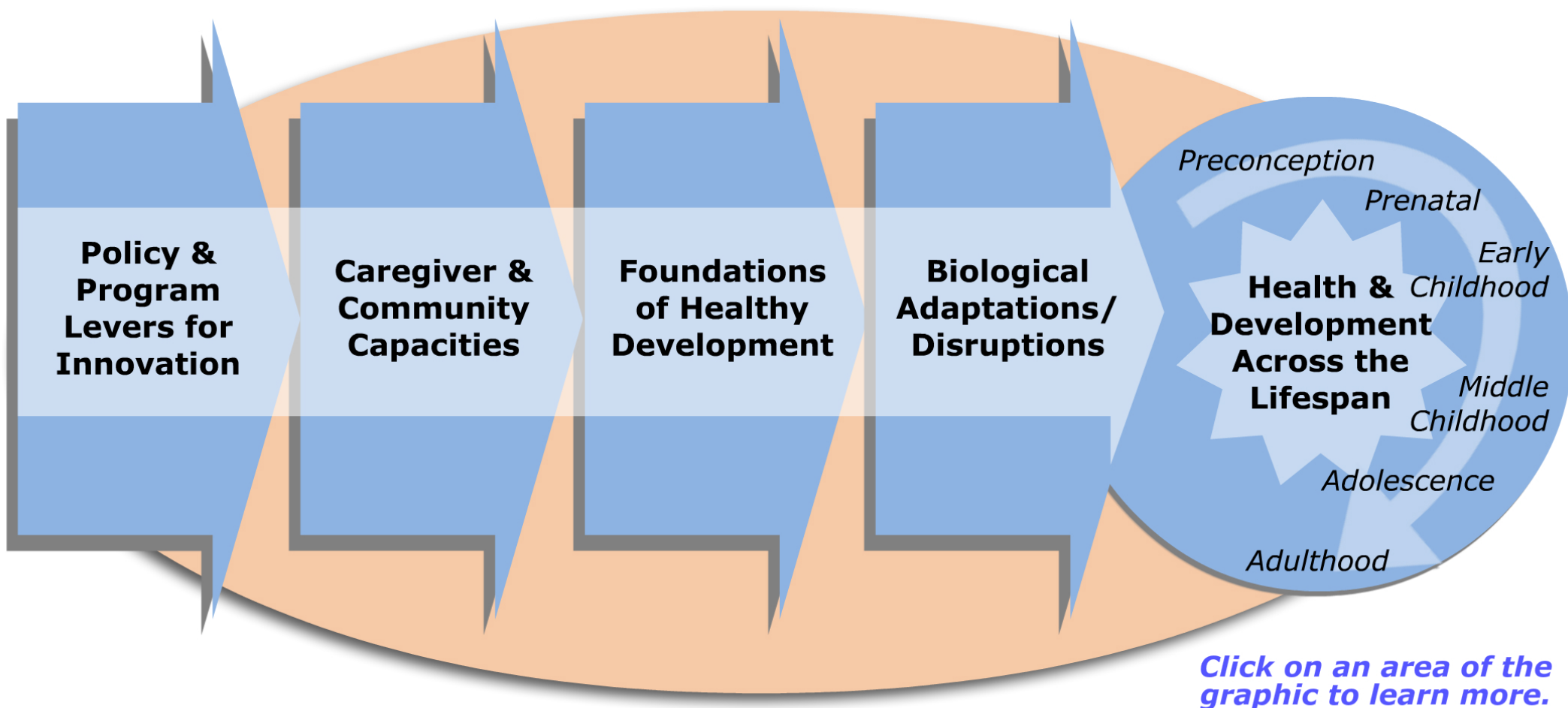


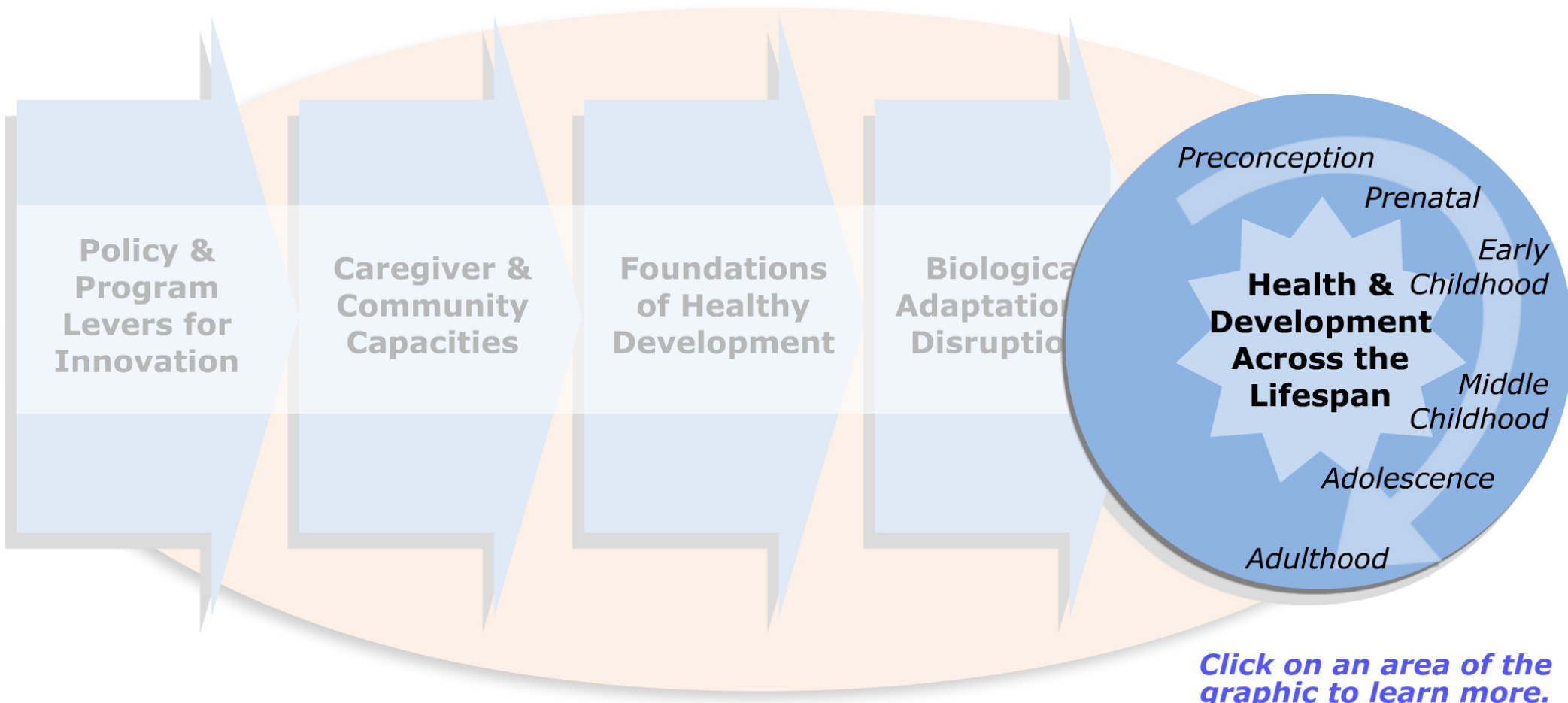
Driving Science-Based Innovation in Policy & Practice: A Logic Model



Science tells us that meeting the developmental needs of young children is as much about building a strong foundation for lifelong physical and mental health as it is about enhancing readiness to succeed in school.

As depicted in the figure from left to right, this logic model shows how **policies and programs** that strengthen specific kinds of **caregiver and community capacities** can build the **foundations of healthy development**. These support beneficial **biological adaptations** in the brain and other organ systems, which lead to positive outcomes in **health and development across the lifespan**.

Health and Development Across the Lifespan

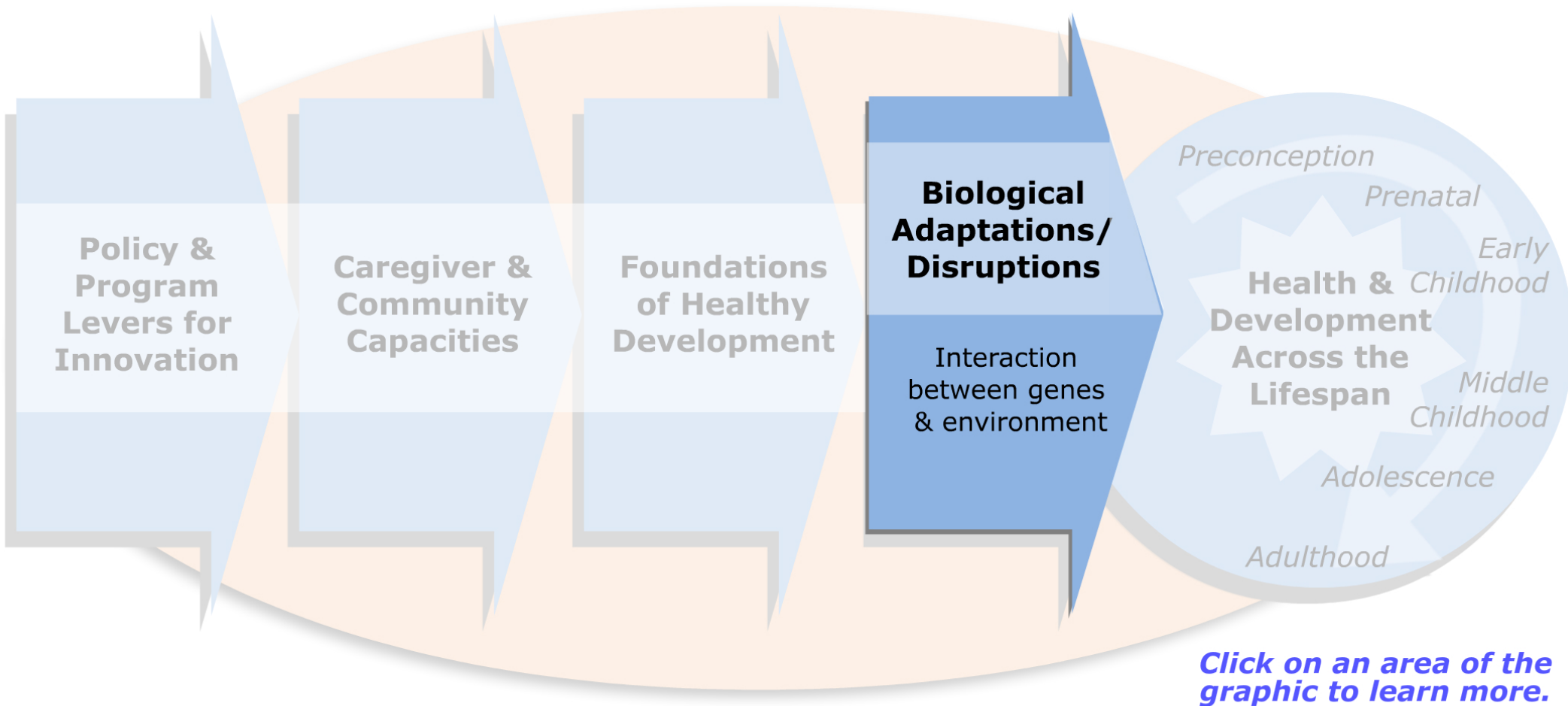


- **Brain architecture is constructed early.**
- **Experiences are built into our bodies.**
- **Brain plasticity decreases over time.**

This call for a broader lens on the developmental lifespan is guided by the following three overarching concepts:

- The architecture of the developing brain is constructed through an ongoing process that begins before birth and continues into adulthood.
- Experiences are built into our bodies (for better or for worse) and significant adversity early in life can produce physiological disruptions or embedded biological “memories.” These may persist into adulthood and lead to lifelong impairments in learning, behavior, and both physical and mental health.
- Brain plasticity and the ability to change behavior decrease over time, so getting things right the first time is less costly, to society and individuals, than trying to fix them later.

Biological Adaptations and Disruptions



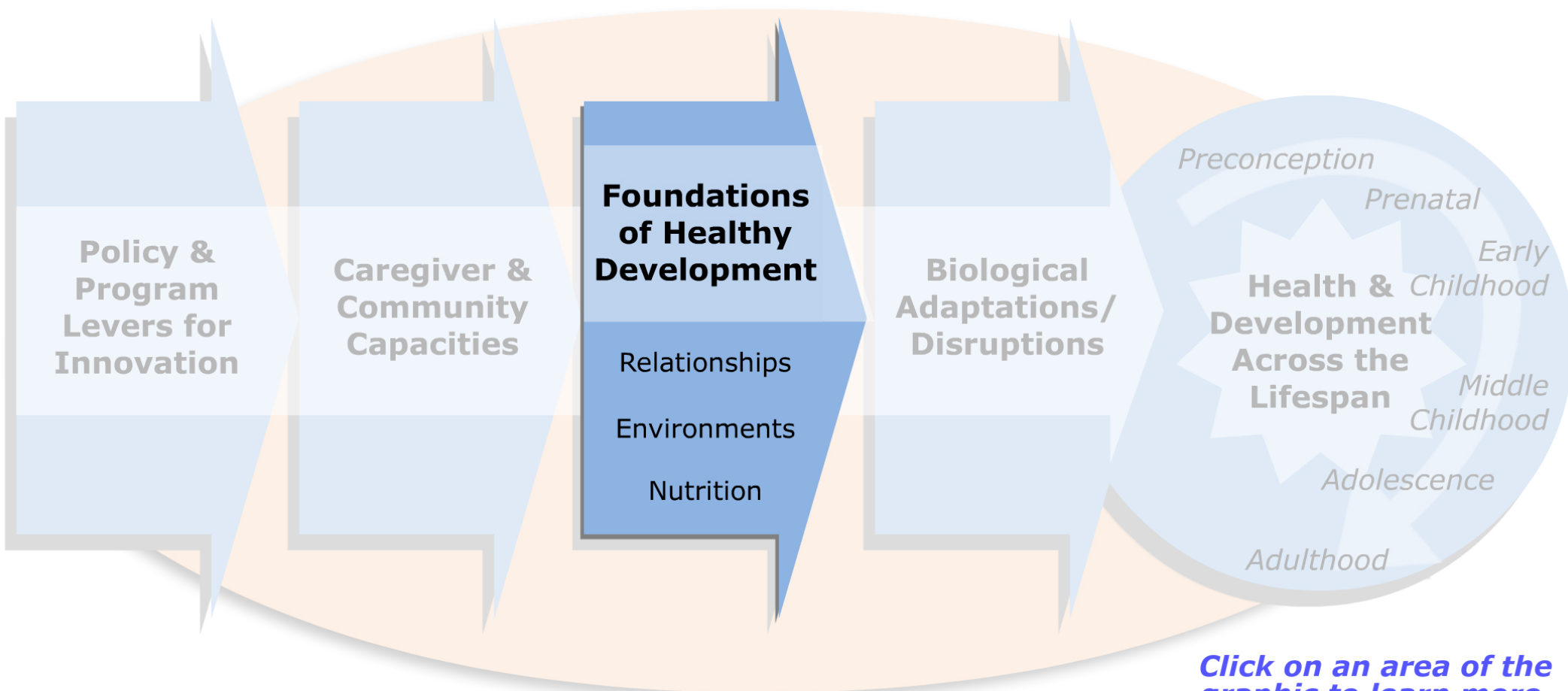
- **Gene expression is altered by experience.**
- **Serve & return interaction builds neural connections.**
- **Adversity disrupts development.**

Advances in science tell us how **experiences and environmental influences "get under the skin" and interact with genetic predispositions**. Our genes contain instructions that tell our bodies how to work, but experiences leave a "signature" on the genes that authorizes or prevents those instructions from being carried out.

This developmental process is fueled by a reciprocal, "serve and return" process in which a young child or adult initiates an interaction, the other responds in turn, and the back-and-forth exchange continues. This interaction is biologically expected and developmentally required to form the strong neural connections that comprise healthy brain architecture.

If children do not experience this kind of positive interaction—or if the other foundations of healthy development are threatened—disruptions to development result, producing a weaker foundation for later development of skills, capacities, and healthy biological systems.

Foundations of Healthy Development

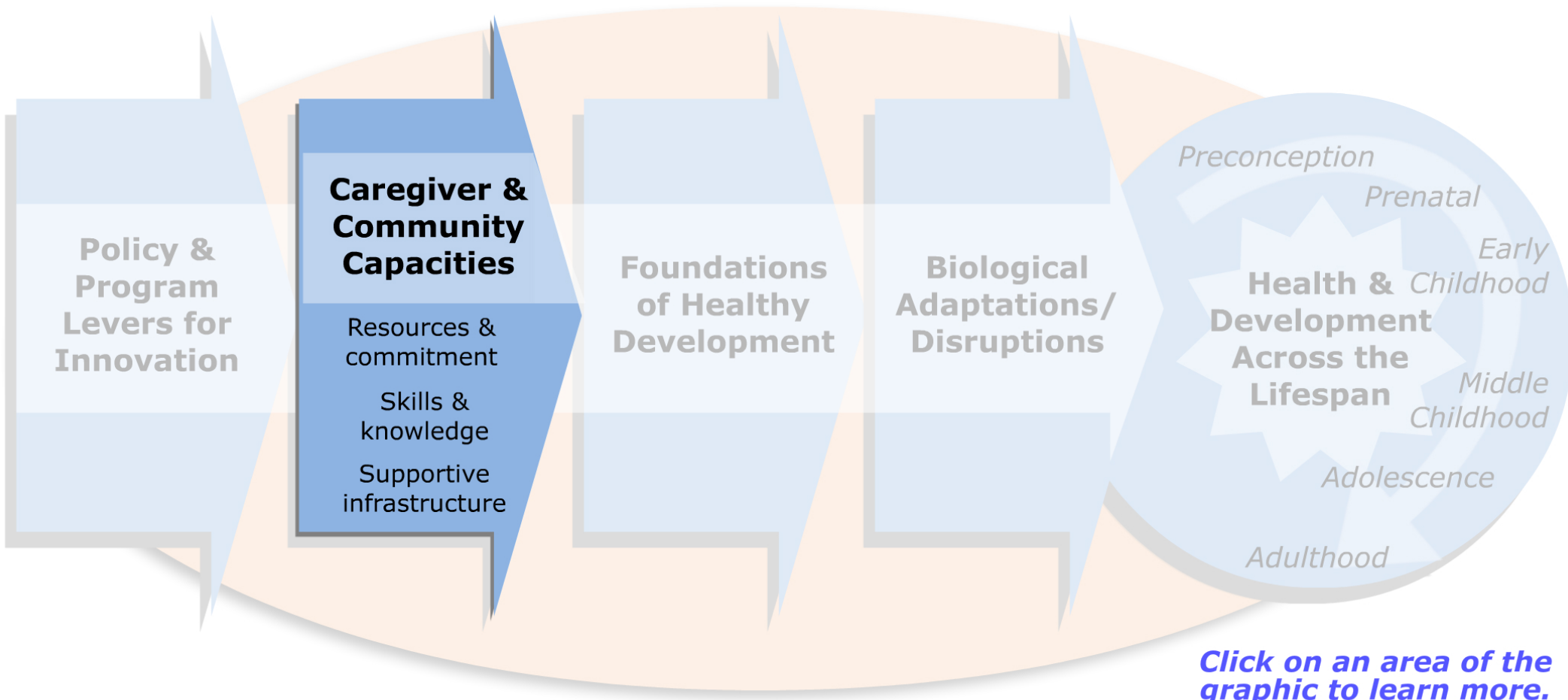


- **Stable and responsive relationships**
- **Safe and supportive environments**
- **Sound and appropriate nutrition**

The following three domains of influence establish a context within which the early roots of development are either nourished or disrupted:

1. *A stable and responsive environment of **relationships***: Young children need consistent, nurturing, and protective interactions with adults that enhance their learning and behavioral self-regulation. These interactions also help them develop adaptive capacities that promote well-regulated stress response systems that contribute to the development of resilience.
2. *Safe and supportive physical, chemical, and built **environments***: Young children need physical and emotional spaces that are free from chemical toxins, allow active exploration without fear or significant risk of harm, and support their family's ability to provide opportunities for physical exercise and safe learning experiences that scaffold learning.
3. *Sound and appropriate **nutrition***: Beginning with a future mother's pre-conception nutritional status and continuing into the early years of the young child's growth and development, the foundational importance of appropriate, health-promoting food intake is essential.

Caregiver and Community Capacities



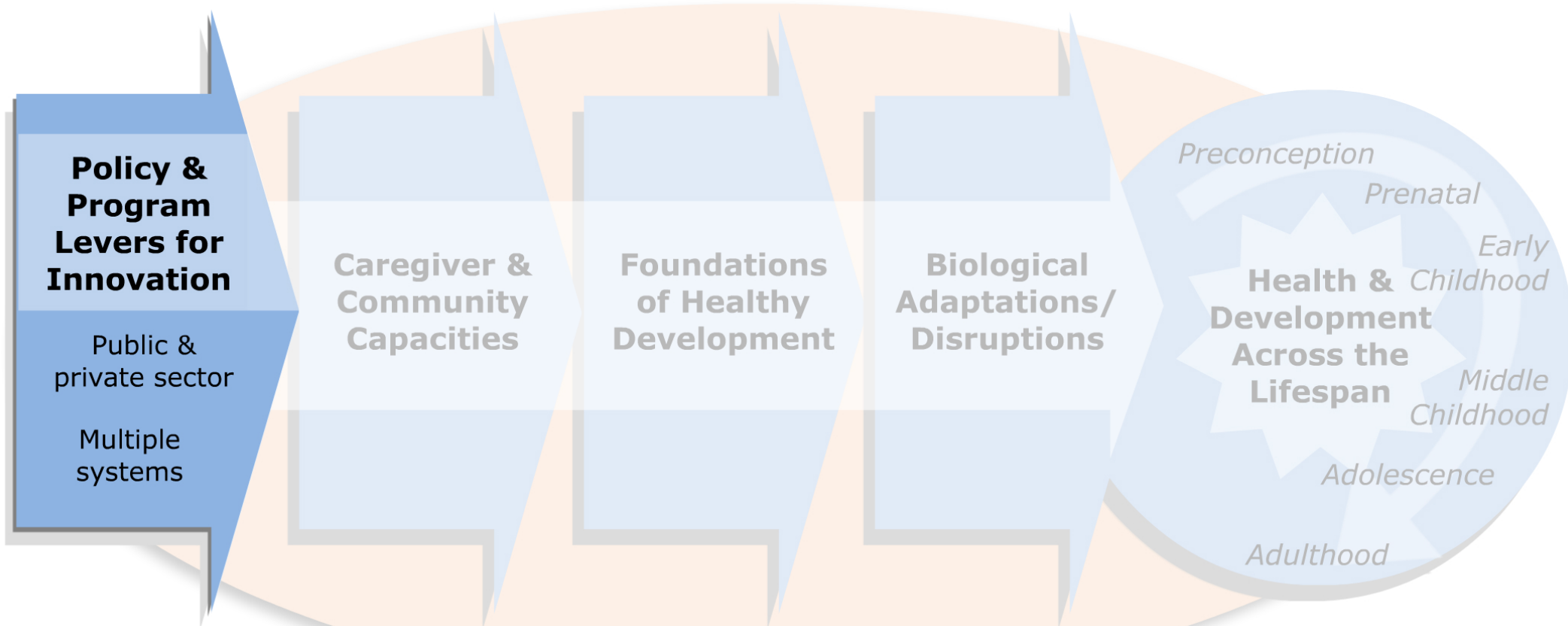
- **Caregivers**: skills for planning, problem-solving, parenting, and teaching
- **Communities**: services and organizations that promote healthy development

Although both individual caregivers and communities as a whole can influence the foundations of child health and development, not all have the same capacities to play a major supportive role in producing strong building blocks.

Parents, professional caregivers, and other adults in children’s lives have varying levels of time and commitment; resources; and finally, skills and knowledge, for example, parenting, caregiving, and teaching skills, as well as the organizational, planning, problem-solving, and critical thinking skills needed to provide growth-promoting environments for young children.

Communities have varying degrees of availability of services and organizations dedicated to the promotion of children’s healthy development and social support for families; supportive infrastructures such as parks, child care facilities, schools, and after-school programs; and political and organizational capabilities that can be leveraged to accomplish strategic goals.

Policy and Program Levers for Innovation



[Click on an area of the graphic to learn more.](#)

Each policy and practice decision could be informed by two simple, guiding questions:

(1) What would this action do to provide children with the stable, caring, responsive relationships with adults that they need to develop healthy brains?

(2) How would this action strengthen the capacities of parents, service providers, and communities to prevent, reduce, or mitigate the adverse effects of toxic stress on the developing brain?

When necessary resources are not available, effective policies and programs can fill the gaps by building those underdeveloped or missing components. Relevant policies include legislative and administrative actions that affect multiple systems responsible for public health, early care and education, primary health care, child welfare, early intervention, family economic stability, community development, and housing, among others. Workplace policies related to parental leave, flexible working hours, and time off to care for a sick child, or attend a parent-teacher conference, are a few examples of private-sector practices that do not require governmental action yet strengthen the capacities of families to raise healthy and competent children. Greater impacts on the life prospects of young children and their families could be achieved if this rich and growing knowledge base were applied to the development of innovative new strategies across multiple policy domains.