

immigration biology definition

immigration biology definition is a term central to understanding how organisms move and establish themselves in new environments. This article explores the meaning of immigration in biology, its significance in ecological and evolutionary contexts, and the various factors that influence the process. We will delve into examples of biological immigration, compare it with related concepts such as emigration and migration, and examine its effects on population genetics and ecosystem dynamics. Whether you are a student, researcher, or simply curious about the natural world, this comprehensive guide will clarify the complex mechanisms behind immigration biology and its role in shaping biodiversity. Read on to discover detailed explanations, real-world examples, and the latest trends in the study of immigration within biological sciences.

- Immigration Biology Definition Explained
- Key Concepts in Biological Immigration
- Factors Influencing Immigration in Biology
- Examples of Immigration in Nature
- Immigration vs. Emigration vs. Migration
- Impact of Immigration on Populations and Ecosystems
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Immigration Biology Definition Explained

In biological terms, immigration refers to the movement of individuals or groups of organisms into a new population or habitat where they were previously absent. This process leads to the addition of new members to the existing population, contributing to genetic diversity and the potential for adaptation. The immigration biology definition encompasses both the physical movement and successful integration of organisms in an environment. Unlike mere dispersal, immigration implies that the newcomers survive, reproduce, and become part of the local community. Understanding immigration is crucial for studying population dynamics, species interactions, and ecological balance.

Key Concepts in Biological Immigration

Population Dynamics

Immigration is a driving force in population dynamics, influencing the size, structure, and genetic composition of populations. When individuals immigrate into a population, they can alter birth and death rates, competition, and resource availability. Immigration biology definition is closely linked to the study of population growth and stability.

Genetic Variation and Adaptation

One of the most significant effects of biological immigration is the introduction of new genetic material. This genetic influx can increase variation within a population, enhancing its ability to adapt to changing environments and resist diseases. Immigration biology is a key factor in evolutionary processes and natural selection.

Species Interactions

Immigration often leads to new interactions between species, such as competition, predation, or mutualism. The arrival of new organisms can disrupt existing relationships or create novel ecological niches, reshaping community structures.

Factors Influencing Immigration in Biology

Environmental Factors

Various environmental factors can facilitate or hinder immigration. These include climate, availability of food and shelter, presence of predators, and geographical barriers like mountains or rivers. Favorable conditions can attract immigrants, while harsh environments may deter them.

Biological Characteristics

- **Mobility:** Species with high mobility, such as birds or insects, are more likely to immigrate.
- **Reproductive Strategies:** Organisms capable of rapid reproduction may

establish populations more easily after immigration.

- **Adaptability:** Highly adaptable species can thrive in new habitats and integrate with local populations.

Human Activities

Human actions such as habitat destruction, urbanization, and introduction of non-native species can influence immigration patterns. Sometimes, humans intentionally facilitate immigration for conservation or agricultural purposes, while in other cases, immigration occurs inadvertently.

Examples of Immigration in Nature

Animal Immigration

A classic example of immigration in biology is seen in birds colonizing new islands. For instance, the Galápagos finches immigrated from mainland South America and established unique populations on the islands, leading to speciation. Similarly, fish may immigrate into freshwater lakes through connected waterways, altering local biodiversity.

Plant Immigration

Plants can immigrate via seed dispersal mechanisms such as wind, water, or animal carriers. The spread of invasive plant species into new regions often begins with immigration, followed by adaptation and proliferation.

Microbial Immigration

Microorganisms, including bacteria and fungi, frequently immigrate to new environments, such as soil or water systems. This process can have significant impacts on nutrient cycling and ecosystem functioning.

Immigration vs. Emigration vs. Migration

Definitions and Differences

While immigration refers to the entry of individuals into a population, emigration is the departure of individuals from a population to another location. Migration, in a biological sense, is a broader term encompassing both immigration and emigration, typically describing seasonal or cyclical movements of populations.

Comparative Analysis

1. Immigration: Entry into a new population or habitat.
2. Emigration: Exit from a population to another habitat.
3. Migration: Periodic movement, often for breeding or resource availability, involving both immigration and emigration.

Understanding these distinctions is essential for interpreting patterns in population biology, conservation strategies, and ecological studies.

Impact of Immigration on Populations and Ecosystems

Population Growth and Stability

Immigration can lead to population growth by adding new individuals, which may help small or declining populations recover. It also stabilizes populations by counteracting losses due to emigration or mortality.

Genetic Diversity

By introducing new genetic material, immigration enhances genetic diversity, reducing the risk of inbreeding and increasing resilience to environmental changes. This process is vital for the long-term survival of species.

Ecosystem Balance

The arrival of new species can affect ecosystem functions, including nutrient

cycling, food web dynamics, and habitat structure. While immigration may benefit ecosystems by increasing biodiversity, it can also cause imbalances if invasive species outcompete native species.

Applications and Importance of Immigration Biology

Conservation Biology

Understanding immigration biology is fundamental for conservation efforts. Introducing individuals to endangered populations (a process called assisted migration) can prevent extinction and restore ecological balance.

Agriculture and Pest Management

Immigration biology helps predict and manage the movement of beneficial organisms, such as pollinators, and harmful pests. This knowledge supports sustainable agricultural practices and ecosystem services.

Public Health

The immigration of disease vectors, such as mosquitoes carrying malaria, has direct implications for public health. Monitoring and managing these movements are essential for disease control and prevention.

Trending Questions and Answers About Immigration Biology Definition

Q: What is the immigration biology definition?

A: Immigration biology definition refers to the process by which individuals or groups of organisms enter and successfully establish themselves in a new population or habitat, contributing to genetic diversity and population growth.

Q: How does immigration affect genetic diversity in

populations?

A: Immigration increases genetic diversity by introducing new alleles, which can enhance a population's adaptability and reduce the risks associated with inbreeding.

Q: What is the difference between immigration, emigration, and migration in biology?

A: Immigration is the entry of individuals into a population, emigration is their departure, and migration encompasses both movements, often in a cyclical or seasonal pattern.

Q: Can plant species immigrate to new environments?

A: Yes, plant species immigrate through seed dispersal by wind, water, or animals, allowing them to colonize new habitats and contribute to ecological dynamics.

Q: Why is immigration biology important in conservation efforts?

A: Immigration biology is crucial for conservation because it helps restore endangered populations, maintain ecological balance, and support biodiversity through the introduction of new individuals.

Q: What factors influence immigration in biological populations?

A: Factors include environmental conditions, species mobility, reproductive strategies, adaptability, and human activities such as habitat alteration or species introduction.

Q: How do invasive species relate to immigration biology?

A: Invasive species are often immigrants that successfully establish in new areas, sometimes outcompeting native species and disrupting local ecosystems.

Q: What role does immigration play in ecosystem functioning?

A: Immigration can enhance ecosystem functioning by increasing biodiversity, but may also cause imbalances if newcomers disrupt established food webs or

resource availability.

Q: Are there examples of human-facilitated immigration in biology?

A: Yes, humans facilitate immigration through activities like conservation translocations, agricultural introductions, and inadvertently by global trade and travel.

Q: How is immigration monitored in biological research?

A: Immigration is monitored using field surveys, genetic analysis, tagging and tracking organisms, and ecological modeling to understand patterns and impacts.

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Immigration Biology Definition: Understanding Species Movement and Its Impact

Introduction:

The term "immigration biology definition" might sound niche, but it's fundamental to understanding the dynamics of ecosystems and the evolution of life itself. This post will unravel the complexities of species immigration from a biological perspective, exploring its various facets, mechanisms, and ecological consequences. We'll delve into the precise definition, discuss the factors driving immigration, examine its impact on biodiversity, and consider the challenges involved in studying this crucial biological process. Prepare to gain a comprehensive understanding of immigration biology and its significance in the natural world.

What is Immigration in Biology?

The immigration biology definition centers on the movement of individuals from one population or

habitat to another, leading to the establishment of a new population in the receiving area. This movement is a crucial component of population ecology and biogeography, influencing gene flow, species distribution, and the overall structure of communities. Unlike emigration (movement out of a population), immigration adds to the existing population size and genetic diversity. It's important to note that this definition focuses on the movement of individuals, not just the spread of genes (gene flow, while related, is a distinct concept).

Mechanisms of Immigration:

Several mechanisms facilitate species immigration. These include:

Dispersal: This is the most common mechanism, referring to the active or passive movement of individuals away from their birthplace. Active dispersal involves animals migrating, flying, or swimming to new locations. Passive dispersal relies on external forces like wind, water currents, or hitchhiking on other organisms (e.g., seeds clinging to animal fur).

Range Expansion: As environmental conditions change, species might expand their geographical range, leading to immigration into previously unoccupied areas. Climate change, habitat alteration, or the removal of barriers can all trigger range expansions.

Human-mediated Movement: Human activities significantly influence species immigration. Accidental introductions (e.g., invasive species transported through cargo ships) and intentional introductions (e.g., the introduction of beneficial insects for pest control) profoundly impact ecosystem dynamics.

Factors Influencing Immigration:

Several factors determine the success of immigration events:

Habitat Suitability: The availability of suitable resources (food, shelter, mates) is paramount. If the receiving habitat lacks essential resources, immigration will likely fail.

Competition: Existing species in the receiving area might compete with immigrants for resources, potentially limiting their establishment success.

Predation and Disease: Predators and diseases in the new environment can significantly reduce immigrant survival and reproductive rates.

Dispersal Barriers: Physical barriers (mountains, oceans) or biological barriers (lack of suitable dispersal vectors) can limit immigration success.

The Impact of Immigration on Biodiversity:

Immigration can have profound impacts on biodiversity:

Increased Biodiversity: Successful immigration can introduce new species, thereby increasing the overall biodiversity of the receiving ecosystem.

Genetic Diversity: Immigrants can introduce new genes into the receiving population, enhancing its genetic diversity and resilience to environmental changes.

Ecosystem Stability: Immigration can buffer ecosystems against disturbances, by increasing the functional diversity of species present.

Invasive Species: Conversely, immigration can also lead to the establishment of invasive species that outcompete native species and disrupt ecosystem functioning. This often leads to biodiversity loss and ecosystem degradation.

Challenges in Studying Immigration Biology:

Studying immigration is challenging due to:

Difficult to Track: Monitoring the movement and establishment of individuals across vast geographical areas is logistically complex.

Long Time Scales: Immigration events can unfold over extended periods, requiring long-term monitoring efforts.

Stochasticity: Immigration success is inherently probabilistic, influenced by unpredictable environmental events.

Interaction Complexity: Unraveling the intricate interactions between immigrants, native species, and the environment requires sophisticated analytical techniques.

Conclusion:

Immigration, as defined in biology, is a dynamic process with far-reaching ecological consequences. Understanding the mechanisms, drivers, and impacts of species immigration is crucial for effective conservation efforts, predicting the effects of environmental change, and managing invasive species. Future research should focus on refining our understanding of immigration's complexities to better protect and manage biodiversity in a rapidly changing world.

FAQs:

1. What's the difference between immigration and colonization in biology? Colonization typically refers to the establishment of a new population in a previously unoccupied area, often following an immigration event. Immigration is the movement itself, while colonization is the successful outcome.
2. How does climate change affect immigration? Climate change alters habitat suitability, pushing species to migrate in search of more favorable conditions. This can lead to increased immigration into new areas, but also potential range contractions in others.
3. How can we mitigate the negative impacts of invasive species immigration? Early detection and rapid response are crucial. This involves strict biosecurity measures, eradication programs, and habitat restoration to help native species compete.
4. What role does genetic diversity play in successful immigration? Higher genetic diversity provides immigrants with a greater chance of adapting to new environmental conditions and resisting diseases.

5. Are there ethical considerations surrounding human-mediated immigration of species? Yes, intentional introductions of species must be carefully assessed to avoid unintended consequences for native biodiversity and ecosystem functioning. Risk assessment and thorough impact studies are crucial.

immigration biology definition: Migration Hugh Dingle, 2014 Migration, broadly defined as directional movement to take advantage of spatially distributed resources, is a dramatic behaviour and an important component of many life histories that can contribute to the fundamental structuring of ecosystems. In recent years, our understanding of migration has advanced radically with respect to both new data and conceptual understanding. It is now almost twenty years since publication of the first edition, and an authoritative and up-to-date sequel that provides a taxonomically comprehensive overview of the latest research is therefore timely. The emphasis throughout this advanced textbook is on the definition and description of migratory behaviour, its ecological outcomes for individuals, populations, and communities, and how these outcomes lead to natural selection acting on the behaviour to cause its evolution. It takes a truly integrative approach, showing how comparisons across a diversity of organisms and biological disciplines can illuminate migratory life cycles, their evolution, and the relation of migration to other movements. *Migration: The Biology of Life on the Move* focuses on migration as a behavioural phenomenon with important ecological consequences for organisms as diverse as aphids, butterflies, birds and whales. It is suitable for senior undergraduate and graduate level students taking courses in behaviour, spatial ecology, 'movement ecology', and conservation. It will also be of interest and use to a broader audience of professional ecologists and behaviourists seeking an authoritative overview of this rapidly expanding field.

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mathematical modelling and empirical research in order to generate a unified understanding of the mechanisms underlying migration.

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Menjívar, Dr. Marie Ruiz, Dr. Immanuel Ness, 2019-01-16 The objective of *The Oxford Handbook of Migration Crises* is to deconstruct, question, and redefine through a critical lens what is commonly understood as migration crises. The volume covers a wide range of historical, economic, social, political, and environmental conditions that generate migration crises around the globe. At the same time, it illuminates how the media and public officials play a major role in framing migratory flows as crises. The volume brings together an exceptional group of scholars from around the world to critically examine migration crises and to revisit the notion of crisis through the context in which permanent and non-permanent migration flows occur. *The Oxford Handbook of Migration Crises* offers an understanding of individuals in societies, socio-economic structures, and group processes. Focusing on migrants' departures and arrivals in all continents, this comprehensive handbook explores the social dynamics of migration crises, with an emphasis on factors that propel these flows as well as the actors that play a role in classifying them and in addressing them. The volume is organized into nine sections. The first section provides a historical overview of the link between migration and crises. The second looks at how migration crises are constructed, while the third section contextualizes the causes and effects of protracted conflicts in producing crises. The fourth focuses on the role of climate and the environment in generating migration crises, while the fifth section examines these migratory flows in migration corridors and transit countries. The sixth section looks at policy responses to migratory flows. The last three sections look at the role media and visual culture, gender, and immigrant incorporation play in migration crises.

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This rich resource also includes a background discussion of what conservation biology is, a wide range of theoretical approaches to the subject, and concrete examples of conservation practice in specific African contexts. Strategies are outlined to protect biodiversity whilst promoting economic development in the region. Boxes covering specific themes written by scientists who live and work throughout the region are included in each chapter, together with recommended readings and suggested discussion topics. Each chapter also includes an extensive bibliography. *Conservation Biology in Sub-Saharan Africa* provides the most up-to-date study in the field. It is an essential resource, available on-line without charge, for undergraduate and graduate students, as well as a handy guide for professionals working to stop the rapid loss of biodiversity in Sub-Saharan Africa and elsewhere.

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combining multiple data sets from the population and the individual levels to estimate demographic parameters, and population size and trends. These models identify drivers of population dynamics and forecast the composition and trajectory of a population. Written by two population ecologists with expertise on integrated population modeling, this book provides a comprehensive synthesis of the relevant theory of integrated population models with an extensive overview of practical applications, using Bayesian methods by means of case studies. The book contains fully-documented, complete code for fitting all models in the free software, R and JAGS. It also includes all required code for pre- and post-model-fitting analysis. Integrated Population Models is an invaluable reference for researchers and practitioners involved in population analysis, and for graduate-level students in ecology, conservation biology, wildlife management, and related fields. The text is ideal for self-study and advanced graduate-level courses. - Offers practical and accessible ecological applications of IPMs (integrated population models) - Provides full documentation of analyzed code in the Bayesian framework - Written and structured for an easy approach to the subject, especially for non-statisticians

immigration biology definition: *Measuring Racial Discrimination* National Research Council, Division of Behavioral and Social Sciences and Education, Committee on National Statistics, Panel on Methods for Assessing Discrimination, 2004-07-24 Many racial and ethnic groups in the United States, including blacks, Hispanics, Asians, American Indians, and others, have historically faced severe discrimination—pervasive and open denial of civil, social, political, educational, and economic opportunities. Today, large differences among racial and ethnic groups continue to exist in employment, income and wealth, housing, education, criminal justice, health, and other areas. While many factors may contribute to such differences, their size and extent suggest that various forms of discriminatory treatment persist in U.S. society and serve to undercut the achievement of equal opportunity. *Measuring Racial Discrimination* considers the definition of race and racial discrimination, reviews the existing techniques used to measure racial discrimination, and identifies new tools and areas for future research. The book conducts a thorough evaluation of current methodologies for a wide range of circumstances in which racial discrimination may occur, and makes recommendations on how to better assess the presence and effects of discrimination.

immigration biology definition: *The Biosphere* Vladimir I. Vernadsky, 2012-12-06 Vladimir Vernadsky was a brilliant and prescient scholar—a true scientific visionary who saw the deep connections between life on Earth and the rest of the planet and understood the profound implications for life as a cosmic phenomenon. -DAVID H. GRINSPOON, AUTHOR OF *VENUS REVEALED* *The Biosphere* should be required reading for all entry level students in earth and planetary sciences. -ERIC D. SCHNEIDER, AUTHOR OF *INTO THE COOL: THE NEW THERMODYNAMICS OF CREATIVE DESTRUCTION*

immigration biology definition: *How to Be a (Young) Antiracist* Ibram X. Kendi, Nic Stone, 2023-09-12 The #1 New York Times bestseller that sparked international dialogue is now a book for young adults! Based on the adult bestseller by Ibram X. Kendi, and co-authored by bestselling author Nic Stone, *How to be a (Young) Antiracist* will serve as a guide for teens seeking a way forward in acknowledging, identifying, and dismantling racism and injustice. The New York Times bestseller *How to be an Antiracist* by Ibram X. Kendi is shaping the way a generation thinks about race and racism. *How to be a (Young) Antiracist* is a dynamic reframing of the concepts shared in the adult book, with young adulthood front and center. Aimed at readers 12 and up, and co-authored by award-winning children's book author Nic Stone, *How to be a (Young) Antiracist* empowers teen readers to help create a more just society. Antiracism is a journey—and now young adults will have a map to carve their own path. Kendi and Stone have revised this work to provide anecdotes and data that speaks directly to the experiences and concerns of younger readers, encouraging them to think critically and build a more equitable world in doing so.

immigration biology definition: *Out of Eden: The Peopling of the World* Stephen Oppenheimer, 2012-03-01 In a brilliant synthesis of genetic, archaeological, linguistic and climatic data, Oppenheimer challenges current thinking with his claim that there was only one successful

migration out of Africa. In 1988 Newsweek headlined the startling discovery that everyone alive on the earth today can trace their maternal DNA back to one woman who lived in Africa 150,000 years ago. It was thought that modern humans populated the world through a series of migratory waves from their African homeland. Now an even more radical view has emerged, that the members of just one group are the ancestors of all non-Africans now alive, and that this group crossed the mouth of the Red Sea a mere 85,000 years ago. It means that not only is every person on the planet descended from one African 'Eve' but every non-African is related to a more recent Eve, from that original migratory group. This is a revolutionary new theory about our origins that is both scholarly and entertaining, a remarkable account of the kinship of all humans. Further details of the findings in this book are presented at www.bradshawfoundation.com/stephenoppenheimer/

immigration biology definition: *Inventing Latinos* Laura E. Gómez, 2022-09-06 Named one of the Best Books of the Year by NPR An NPR Best Book of the Year, exploring the impact of Latinos' new collective racial identity on the way Americans understand race, with a new afterword by the author Who are Latinos and where do they fit in America's racial order? In this "timely and important examination of Latinx identity" (Ms.), Laura E. Gómez, a leading critical race scholar, argues that it is only recently that Mexican Americans, Puerto Ricans, Cubans, Dominicans, Central Americans, and others are seeing themselves (and being seen by others) under the banner of a cohesive racial identity. And the catalyst for this emergent identity, she argues, has been the ferocity of anti-Latino racism. In what Booklist calls "an incisive study of history, complex interrogation of racial construction, and sophisticated legal argument," Gómez "packs a knockout punch" (Publishers Weekly), illuminating for readers the fascinating race-making, unmaking, and re-making processes that Latinos have undergone over time, indelibly changing the way race functions in this country. Building on the "insightful and well-researched" (Kirkus Reviews) material of the original, the paperback features a new afterword in which the author analyzes results of the 2020 Census, providing brilliant, timely insight about how Latinos have come to self-identify.

immigration biology definition: *An Illustrated Dictionary of Medicine, Biology and Allied Sciences* George Milbry Gould, 1899

immigration biology definition: *Understanding Racial and Ethnic Differences in Health in Late Life* National Research Council, Division of Behavioral and Social Sciences and Education, Committee on Population, Panel on Race, Ethnicity, and Health in Later Life, 2004-09-08 As the population of older Americans grows, it is becoming more racially and ethnically diverse. Differences in health by racial and ethnic status could be increasingly consequential for health policy and programs. Such differences are not simply a matter of education or ability to pay for health care. For instance, Asian Americans and Hispanics appear to be in better health, on a number of indicators, than White Americans, despite, on average, lower socioeconomic status. The reasons are complex, including possible roles for such factors as selective migration, risk behaviors, exposure to various stressors, patient attitudes, and geographic variation in health care. This volume, produced by a multidisciplinary panel, considers such possible explanations for racial and ethnic health differentials within an integrated framework. It provides a concise summary of available research and lays out a research agenda to address the many uncertainties in current knowledge. It recommends, for instance, looking at health differentials across the life course and deciphering the links between factors presumably producing differentials and biopsychosocial mechanisms that lead to impaired health.

immigration biology definition: *Migration and Mental Health* Dinesh Bhugra, Susham Gupta, 2010-12-02 Human migration is a global phenomenon and is on the increase. It occurs as a result of 'push' factors (asylum, natural disaster), or as a result of 'pull' factors (seeking economic or educational improvement). Whatever the cause of the relocation, the outcome requires individuals to adjust to their new surroundings and cope with the stresses involved, and as a result, there is considerable potential for disruption to mental health. This volume explores all aspects of migration, on all scales, and its effect on mental health. It covers migration in the widest sense and does not limit itself to refugee studies. It covers issues specific to the elderly and the young, as well as

providing practical tips for clinicians on how to improve their own cultural competence in the work setting. The book will be of interest to all mental health professionals and those involved in establishing health and social policy.

immigration biology definition: *U.S. Health in International Perspective* National Research Council, Institute of Medicine, Board on Population Health and Public Health Practice, Division of Behavioral and Social Sciences and Education, Committee on Population, Panel on Understanding Cross-National Health Differences Among High-Income Countries, 2013-04-12 The United States is among the wealthiest nations in the world, but it is far from the healthiest. Although life expectancy and survival rates in the United States have improved dramatically over the past century, Americans live shorter lives and experience more injuries and illnesses than people in other high-income countries. The U.S. health disadvantage cannot be attributed solely to the adverse health status of racial or ethnic minorities or poor people: even highly advantaged Americans are in worse health than their counterparts in other, peer countries. In light of the new and growing evidence about the U.S. health disadvantage, the National Institutes of Health asked the National Research Council (NRC) and the Institute of Medicine (IOM) to convene a panel of experts to study the issue. The Panel on Understanding Cross-National Health Differences Among High-Income Countries examined whether the U.S. health disadvantage exists across the life span, considered potential explanations, and assessed the larger implications of the findings. *U.S. Health in International Perspective* presents detailed evidence on the issue, explores the possible explanations for the shorter and less healthy lives of Americans than those of people in comparable countries, and recommends actions by both government and nongovernment agencies and organizations to address the U.S. health disadvantage.

immigration biology definition: *Strengthening Forensic Science in the United States* National Research Council, Division on Engineering and Physical Sciences, Committee on Applied and Theoretical Statistics, Policy and Global Affairs, Committee on Science, Technology, and Law, Committee on Identifying the Needs of the Forensic Sciences Community, 2009-07-29 Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. *Strengthening Forensic Science in the United States: A Path Forward* provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. *Strengthening Forensic Science in the United States* gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

immigration biology definition: *Research Strategies in Human Biology* Gabriel Ward Lasker, C. G. Nicholas Mascie-Taylor, 1993-11-04 This book is about the process of doing research, not about the results obtained. A number of researchers with experience working on problems including environmental stresses, population genetics, parasitic vectors and vital records describe obstacles encountered and successful strategies employed in their own studies and in those of others. One learns to do research by trial and error, but accounts such as these can supplement what one learns from mentors and fellow students.

immigration biology definition: *Immigration and Freedom* Chandran Kukathas, 2021-03-16 A compelling account of the threat immigration control poses to the citizens of free societies

Immigration is often seen as a danger to western liberal democracies because it threatens to undermine their fundamental values, most notably freedom and national self-determination. In this book, however, Chandran Kukathas argues that the greater threat comes not from immigration but from immigration control. Kukathas shows that immigration control is not merely about preventing outsiders from moving across borders. It is about controlling what outsiders do once in a society: whether they work, reside, study, set up businesses, or share their lives with others. But controlling outsiders—immigrants or would-be immigrants—requires regulating, monitoring, and sanctioning insiders, those citizens and residents who might otherwise hire, trade with, house, teach, or generally associate with outsiders. The more vigorously immigration control is pursued, the more seriously freedom is diminished. The search for control threatens freedom directly and weakens the values upon which it relies, notably equality and the rule of law. Kukathas demonstrates that the imagined gains from efforts to control immigration are illusory, for they do not promote economic prosperity or social solidarity. Nor does immigration control bring self-determination, since the apparatus of control is an international institutional regime that increases the power of states and their agencies at the expense of citizens. That power includes the authority to determine who is and is not an insider: to define identity itself. Looking at past and current practices across the world, *Immigration and Freedom* presents a critique of immigration control as an institutional reality, as well as an account of what freedom means—and why it matters.

immigration biology definition: Avian Migration Peter Berthold, Eberhard Gwinner, Edith Sonnenschein, 2013-03-09 P. Berthold and E. Gwinner Bird migration is an intriguing aspect of the living world - so much so that it has been investigated for as long, and as thoroughly, as almost any other natural phenomenon. Aristotle, who can count as the founder of scientific ornithology, paid very close attention to the migrations of the birds he observed, but it was not until the reign of Friedrich II, in the first half of the 13th century, that reliable data began to be obtained. From then on, the data base grew rapidly. Systematic studies of bird migration were introduced when the Vogelwarte Rossitten was founded, as the first ornithological biological observation station in the world (see first chapter In Memory of Vogelwarte Rossitten). This area later received enormous impetus when experimental research on the subject was begun: the large-scale bird-ringing experiment initiated in Rossitten in 1903 by Johannes Thienemann (who was inspired by the pioneering studies of C. C. M. Mortensen), the experiments on photoperiodicity carried out by William Rowan in the 1920s in Canada and retention and release experiments performed by Thienemann in the 1930s in Rossitten, the first experimental study on the orientation of migratory birds. After the Second World War, migration research, while continuing in the previous areas, also expanded into new directions such as radar ornithology, ecophysiology and hormonal control mechanisms, studies of evolution, genetics, telemetry and others.

immigration biology definition: Metapopulation Biology Ilkka Hanski, Michael E. Gilpin, 1997 This volume presents a review of metapopulation biology. It describes key theories of study and applies the best field studies to the conservation of species in fragmented landscapes. The work explains and critically assesses the value of the metapopulation concept for field studies and conservation.

immigration biology definition: From Neurons to Neighborhoods National Research Council, Institute of Medicine, Board on Children, Youth, and Families, Committee on Integrating the Science of Early Childhood Development, 2000-11-13 How we raise young children is one of today's most highly personalized and sharply politicized issues, in part because each of us can claim some level of expertise. The debate has intensified as discoveries about our development-in the womb and in the first months and years-have reached the popular media. How can we use our burgeoning knowledge to assure the well-being of all young children, for their own sake as well as for the sake of our nation? Drawing from new findings, this book presents important conclusions about nature-versus-nurture, the impact of being born into a working family, the effect of politics on programs for children, the costs and benefits of intervention, and other issues. The committee issues a series of challenges to decision makers regarding the quality of child care, issues of racial and

ethnic diversity, the integration of children's cognitive and emotional development, and more. Authoritative yet accessible, *From Neurons to Neighborhoods* presents the evidence about brain wiring and how kids learn to speak, think, and regulate their behavior. It examines the effect of the climate-family, child care, community-within which the child grows.

immigration biology definition: *Counted Out* Brian Powell, Catherine Blozendahl, Claudia Geist, Lala Carr Steelman, 2010-09-01 When state voters passed the California Marriage Protection Act (Proposition 8) in 2008, it restricted the definition of marriage to a legal union between a man and a woman. The act's passage further agitated an already roiling national debate about whether American notions of family could or should expand to include, for example, same-sex marriage, unmarried cohabitation, and gay adoption. But how do Americans really define family? The first study to explore this largely overlooked question, *Counted Out* examines currents in public opinion to assess their policy implications and predict how Americans' definitions of family may change in the future. *Counted Out* broadens the scope of previous studies by moving beyond efforts to understand how Americans view their own families to examine the way Americans characterize the concept of family in general. The book reports on and analyzes the results of the authors' *Constructing the Family Surveys* (2003 and 2006), which asked more than 1,500 people to explain their stances on a broad range of issues, including gay marriage and adoption, single parenthood, the influence of biological and social factors in child development, religious ideology, and the legal rights of unmarried partners. Not surprisingly, the authors find that the standard bearer for public conceptions of family continues to be a married, heterosexual couple with children. More than half of Americans also consider same-sex couples with children as family, and from 2003 to 2006 the percentages of those who believe so increased significantly—up 6 percent for lesbian couples and 5 percent for gay couples. The presence of children in any living arrangement meets with a notable degree of public approval. Less than 30 percent of Americans view heterosexual cohabitating couples without children as family, while similar couples with children count as family for nearly 80 percent. *Counted Out* shows that for most Americans, however, the boundaries around what they define as family are becoming more malleable with time. *Counted Out* demonstrates that American definitions of family are becoming more expansive. Who counts as family has far-reaching implications for policy, including health insurance coverage, end-of-life decisions, estate rights, and child custody. Public opinion matters. As lawmakers consider the future of family policy, they will want to consider the evolution in American opinion represented in this groundbreaking book. A Volume in the American Sociological Association's Rose Series in Sociology

immigration biology definition: Migration of Organisms Ashraf M.T. Elewa, 2005-12-14 Why do some animals migrate? How does migration affect the gene pool? This book discusses these questions and more, in light of the high evolutionary costs and risks of mass movement. The editor presents a collection of topics explaining the migration of organisms through many examples of different groups of marine and non-marine organisms, from micro-invertebrates to large mammals.

immigration biology definition: Evolution of Insect Migration and Diapause H. Dingle, 2012-12-06 This volume is an outgrowth of a Symposium entitled *Evolution of Escape in Space and Time* held at the XV International Congress of Entomology in Washington, D. C., USA in August, 1976. The choice of topic was prompted by recent advances in evolutionary ecology and the apparent suitability of insect migration and diapause as appropriate material for evolutionary studies. In the event, that choice seems amply justified as I hope a perusal of these papers will show. These Symposium papers hardly cover the topic of the evolution of escape mechanisms exhaustively, and I am sure everyone will have his favorite lacuna. Some of the more obvious ones are indicated by Professor Southwood in his Concluding Remarks at the end of the book. The purpose of the Symposium, however, was not complete coverage, but rather to indicate the potential inherent in insect migration and diapause for the study of evolutionary problems. In that I think we have succeeded reasonably well. These papers are expanded and in some cases somewhat altered versions of the papers delivered in Washington. This has allowed greater coverage of the topics in question. I suggested a format of a general overview of a topic emphasizing the author's own

research contributions. In general the papers follow this outline although emphases vary. Two of the authors, Dr. Rainey and Dr. Lumme, were unable to attend the Symposium. Dr. Rainey's paper was read by Mr. Frank Walsh, but Dr.

immigration biology definition: *Animal Movement Across Scales* Lars-Anders Hansson, Susanne Åkesson, 2014 This study takes a broad and timely approach to animal movement across both temporal and spatial scales. Movement and migration on land, in the air, and in water are pervading features of animal life-from the smallest protozoans to the largest whales - and can extend from millimetres to global scale. Research into animal movement ecology is now entering a new era with the development of novel molecular, electronic, and technical methods that make it possible to analyse the movements of individual animals under complex environmental conditions that determine the evolution of movement habits.

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