“Highlights” calls attention to exciting advances in developmental biology that have recently been reported in Developmental Dynamics. Development is a broad field encompassing many important areas. To reflect this fact, the section spotlights significant discoveries that occur across the entire spectrum of developmental events and problems: from new experimental approaches, to novel interpretations of results, to noteworthy findings utilizing different developmental organisms.

**Retinoic acid trip** *(Dev Dyn* 237:1321–1333) It is well known that an acid trip can lead the user to an altered state. The response of the urogenital sinus (UGS)—which gives rise to the prostate—to retinoic acid (RA) is no exception. Based in part on the observation that RA plays a prominent role in prostate maturation, the authors examined whether it also regulates induction. Consistent with an early role, the UGS outer mesenchyme expresses a dizzying array of RA pathway components: an RA response element reporter, RA receptors, aldehyde dehydrogenases (ALDHs), enzymes that synthesize the active form of RA, and cytochrome p450, an RA metabolizing enzyme. But what happens when UGS takes a hit of RA? The tissue responds to increased RA dosage by sprouting more and more prostatic buds—a trippy sight. Moreover, RA increases the ratio of Shh to BMP4 expression, a known prostate inducer and inhibitor, respectively. The observation suggests the signaling molecules may do RA’s dirty work. The next step is an in vivo confirmation of the findings—those mice don’t know what they are in for.

**A clean slate** *(Dev Dyn* 237:1463–1476) Have you ever wished that you could erase the past and start over? Spermatogonia—which around the time of conception replace their paternal genetic program with the zygote’s—are one of few that can accomplish this feat. How do they do it? Mainly using immunohistochemistry, the authors figure this out by visualizing (sub-)nuclear localization of chromatin factors (CFs) throughout spermatogenesis, including general and specific transcription factors, and chromatin remodelers and architectural proteins. Across the board, most CFs examined begin clearing from chromatin after step 7 in spermiogenesis, a process that is mostly complete by step 10. Significantly, the timing of CF dispersion is mirrored by cessation of transcriptional activity, indicating a causal relationship. Moreover, these events occur after meiosis and before chromatin condensation (step 12), suggesting their functional independence from these developmental milestones. CFs reassociate with chromatin in the 1-cell zygote and is complete just after pronuclear formation. Want a fresh start? Begin with a clean slate, then rebuild your relationships.

**Building on foundations** *(Dev Dyn* 237:1490–1499) As a simply built animal that retains the chordate body plan throughout its life, the tiny tunicate *Oikopleura dioica* has become a valuable tool for understanding vertebrate evolution. The urochordate’s endostyle, which secretes food-wrapping mucous, is homologous to the vertebrate thyroid. To gain insights into the organ’s evolution, the authors investigated molecules that pattern its anterior–posterior (AP) axis. They discover there is an ordered AP expression pattern of *Otx1*, then *Pax2/5/8* paralogs a and b, then *Hox1* in the endostyle primordium through to differentiation. Strikingly, the central nervous system of chordates, hemichordates, and flies also harbor this “tripartite” regionalization. The discovery of the putative conserved gene cassette begs the question, how is the tripartite pattern set up? The answer, more easily found in simpler organisms like *Oikopleura*, may have broad repercussions.