1044-37-240 **Alexander M. Blokh** (ablokh@math.uab.edu), Department of Mathematics, University of Alabama at Birmingham, 494A Camptbell Hall, Birmingham, AL 35294-1170, **Clinton P. Curry*** (clintonc@uab.edu), Department of Mathematics, University of Alabama at Birmingham, 455 Camptbell Hall, Birmingham, AL 35294-1170, and **Lex G. Oversteegen** (overstee@math.uab.edu), Department of Mathematics, University of Alabama at Birmingham, 452 Campbell Hal, Birmingham, AL 35294-1170. *Locally connected models for Julia sets of polynomials.*

Let $P : \mathbb{C} \to \mathbb{C}$ be a polynomial of degree d with connected Julia set J. A *locally connected model* of $P|_J$ is a dynamical system $P_\sim : J_\sim \to J_\sim$ on a locally connected continuum $J_\sim$ to which $P|_J$ is monotonically semiconjugate. Jan Kiwi (2004) constructed non-degenerate (i.e., not the identity map on a point) locally connected models for polynomials P without irrationally neutral periodic points, and showed in that case that the locally connected model $J_\sim$ comes from a finite-to-one map $\Phi : \mathbb{S}^1 \to J_\sim$ which semiconjugates $z \mapsto z^d$ to $P_\sim$.

We extend Kiwi's work to all polynomials with connected Julia set. We prove that there is a *finest* locally connected model of $P|_J$, and that the semiconjugacy is the finest monotone map of J to any locally connected continuum. (By a finest monotone map of J to any locally connected continuum, we mean a map m of J onto a locally connected continuum such that any other such monotone map m' is a composition of m with another monotone map.) We characterize the models and their associated laminations, and characterize dynamically when the finest locally connected model is non-degenerate. (Received September 02, 2008)