Analog of order topology for funcoids/reloids.

A set is connected if every function from it to a discrete space is constant. Can this be generalized for generalized connectedness and generalized continuity? I have no idea how to relate these two concepts in general.

Develop theory of *funcoidal groups* by analogy with topological groups. Attempt to use this theory to solve this open problem:
http://garden.irmacs.sfu.ca/?q=op/iseveryregularparatopologicalgrouptychonoff
Is it useful as topological group determines not only a topology but even a uniformity? An interesting article on topological groups: https://arxiv.org/abs/1901.01420

Consider generalizations of this article:
https://www.researchgate.net/publication/318822240_Categorically_Closed_Topological_Groups

A space μ is $T2$- iff the diagonal Δ is closed in $\mu \times \mu$.

The β-th projection map is not only continuous but also open (Willard, theorem 8.6).

Tx-separation axioms for products of spaces.

Willard 13.13 and its important corollary 13.14.

Willard 15.10.

About real-valued functions on endofuncoids: Urysohn's Lemma (and consequences: Tietze's extension theorem) for funcoids.

About product of reloids:
http://portonmath.wordpress.com/2012/05/23/unfirunded-questions/

Generalized Fréchet filter on a poset (generalize for filtrators) $\mathfrak{A}$ is a filter Ω such that

$$\partial\Omega = \left\{ \frac{x \in \mathfrak{A}}{\text{atoms}\, x \text{ is infinite}} \right\}.$$

Research their properties (first, whether they exists for every poset). Also consider Fréchet element of $\mathsf{FCD}(A; B)$. Another generalization of Fréchet filter is meet of all coatoms.

Manifolds.

http://www.sciencedirect.com/science/article/pii/0304397585900623
(free download, also Google for "pre-adjunction", also "semi" instead of "pre") Are (FCD) and $(\mathsf{RLD})_{\mathrm{in}}$ adjunct?

Check how multicategories are related with categories with star-morphisms.

At https://en.wikipedia.org/wiki/Semilattice they are defined distributive semilattices. A join-semilattice is distributive if and only if the lattice of its ideals (under inclusion) is distributive.

The article http://arxiv.org/abs/1410.1504 has solved "Every paratopological group is Tychonoff" conjecture positively. Rewrite this article in terms of funcoids and reloids (especially with the algebraic formulas characterizing regular funcoids).

Generalize interior in topological spaces as the *interior funcoid* of a co-complete funcoid f, defined as a pointfree funcoid $f^\circ : \mathscr{F}\,\mathrm{dual}\,\mathrm{Src}\, f \to \mathscr{F}\,\mathrm{dual}\,\mathrm{Dst}\, f$ conforming to the formula: $\langle f^\circ \rangle^* (I \sqcap J) = \overline{\langle f \rangle^* \overline{I \sqcap J}} = \overline{\langle f \rangle^* (\overline{I} \sqcup \overline{J})}$. However composition of an interior funcoid with a funcoid is neither a funcoid nor an interior funcoid. It can be generalized using pseudocomplement.

http://math.sun.ac.za/cattop/Output/Kunzi/quasiintr.pdf "An Introduction to the Theory of Quasi-uniform Spaces".