What is claimed is:

1. A surface-modifying additive composition, comprising:

an oligomeric or polymeric additive formed from two or more of:

i) a zwitterionic monomer or a polyalkylene glycol monomer;

ii) a silicone or fluorocarbon monomer, or combinations thereof; or

iii) an alkyl substituted methacrylate, acrylate, acrylamide, or vinyl monomer, or combinations thereof.

2. The surface-modifying additive composition of claim 1, wherein the oligomeric or polymeric additive is a random, a block, a graft or a branched polymer or copolymer.

3. The surface-modifying additive composition of claim 1 or 2, wherein the silicone or fluorocarbon monomer is present in the additive in an amount from 5 wt% to 40 wt% of total monomer composition.

4. The surface-modifying additive composition of claim 3, wherein the silicone monomer comprises a functionalized polysiloxane.

5. The surface-modifying additive composition of any one of claims 1 to 4, wherein the zwitterionic monomer is present in an amount from 10 wt% to 40 wt% of the total monomer composition.

6. The surface-modifying additive composition of claim 5, wherein the zwitterionic monomer comprises a phosphorylcholine, a carboxybetaine, or a sulfobetaine monomer.

7. The surface-modifying additive composition of any one of claims 1 to 3, wherein the fluorocarbon monomer includes a functionalized fluorocarbon.

8. The surface modifying additive composition of any one of claims 1 to 7, wherein the polyaklyene glycol monomer is present in an amount from 10 wt% to 50 wt% of the total monomer composition.

9. The surface-modifying additive composition of claim 8, wherein the polyalkylene glycol monomer is a monomethyl polyethylene glycol methacrylate.

10. The surface-modifying additive composition of claim 1, wherein the alkyl or other substituted methacrylate, acrylate, acrylamide or vinyl monomer is present in an amount from 10 wt% to 70 wt% of the total monomer composition.

11. The surface-modifying additive composition of claim 10, wherein the alkyl or other substituted methacrylate, acrylate, acrylamide or vinyl monomer comprises methyl methacrylate.

12. The surface-modifying additive composition of claim 6, wherein the phosphorylcholine monomer comprises 2-hydroxyethyl methacrylate phosphorylcholine.

13. The surface-modifying additive composition of any one of claims 1 to 12, wherein the additive composition has a molecular weight (Mn) of from 1000 to 50,000 daltons.

14. The surface-modifying additive composition of any one of claims 1 to 13, wherein the additive composition provides a reduction in protein absorption of at least 50 percent, or at least 60 percent, or at least 70 percent.

15. A surface-modified polymer composition comprising:

a) the surface modifying additive composition of any one of claims 1 to 14; and

b) a base polymer.

16. The surface-modified polymer composition of claim 15, wherein the surface-modifying additive composition is added to the base polymer to form a blend.

17. The surface-modified polymer composition of claim 15 or 16, wherein the base polymer comprises a nylon, a polyethylene, a polyester, a thermoplastic polyurethane, a polyvinylchloride, a polysulfone, a polysiloxane, a polypropylene, a polycarbonate, a polyether sulfone, a polyether ether ketone, a polylactide (PLA) polymer, a polylactide-co-glycolide (PLG) polymer, a polycaprolactone polymer, a polydioxanol polymer, a poly(1,3-trimethylene carbonate) polymer, a polytyrosine carbonate polymer, a polyacrylate, a polymethacrylate, polylactic acid, polyglycolic acid, and combinations thereof.

18. The surface-modified polymer composition of claim 17, wherein the base polymer comprises thermoplastic polyurethane.

19. The surface-modified polymer composition of claim 19, further comprising one or more additional thermoplastic polyurethanes to form a thermoplastic polyurethane blend.

20. The surface-modified polymer composition of any one of claims 15 to 19, wherein the surface modified polymer composition is non-protein fouling, non-thrombogenic, or combinations thereof.

21. The surface-modified polymer composition of any one of claims 15 to 20, wherein the surface modifying additive composition is present in the polymer composition in an amount from 0.1 wt% to 10 wt%.

22. A method of making a surface-modified polymer composition, comprising:

a) forming an oligomeric or polymeric additive comprising i) a zwitterionic monomer, or a polyalkylene glycol monomer; ii) a silicone or fluorocarbon monomer, or combinations thereof; or iii) an alkyl substituted methacrylate, acrylate, acrylamide, or vinyl monomer, or combinations thereof; and

b) incorporating the additive into a base polymer.

23. The method of claim 22, wherein incorporating of the additive comprises melt processing of the additive into the base polymer or addition of the additive during synthesis of the polymer.

24. The method of claim 22 or 23, further comprising annealing the polymer composition.

25. The method of claim 24, wherein annealing is performed at a temperature of from about the glass transition temperature of the base polymer up to about the melting point of the base polymer.

26. The method of any one of claims 22 to 25, wherein the annealing is performed at a temperature of from about 50°C to about 150°C for a period of from 2 hr up to about 7 days.

27. The method of any one of claims 22 to 27, wherein the base polymer comprises a nylon, a polyethylene, a polyester, a thermoplastic polyurethane, a polyvinylchloride, a polysulfone, a polysiloxane, a polypropylene, a polycarbonate, a polyether sulfone, a polyether ether ketone, a polylactide (PLA) polymer, a polylactide-co-glycolide (PLG) polymer, a polycaprolactone polymer, a polydioxanol polymer, a poly(1,3-trimethylene carbonate) polymer, a polytyrosine carbonate polymer, a polyacrylate, a polymethacrylate, polylactic acid, polyglycolic acid, and combinations thereof.

28. An article including a surface modifying polymer composition, the surface modifying polymer composition comprising:

a) an oligomeric or polymeric additive formed from two or more of:

i) a zwitterionic monomer or a polyalkylene glycol monomer;

ii) a silicone or fluorocarbon monomer, or combinations thereof; or

iii) an alkyl substituted methacrylate, acrylate, acrylamide, or vinyl monomer, or combinations thereof; and

b) a base polymer;

wherein the oligomeric or polymeric additive is incorporated into the base polymer.

29. The article of claim 28, wherein the polymer composition is coated onto a material forming the article.

30. The article of claims 27 or 28 , wherein the polymer composition is coated utilizing dip coating, roll to roll coating, spin coating or spray coating.

31. The article of claim 30, wherein the coating is applied at a thickness from 1 micrometer to 200 micrometers.

32. The article of any one of claim 28 through 31, wherein the base polymer comprises a nylon, a polyethylene, a polyester, a thermoplastic polyurethane, a polyvinylchloride, a polysulfone, a polysiloxane, a polypropylene, a polycarbonate, a polyether sulfone, a polyether ether ketone, a polylactide (PLA) polymer, a polylactide-co-glycolide (PLG) polymer, a polycaprolactone polymer, a polydioxanol polymer, a poly(1,3-trimethylene carbonate) polymer, a polytyrosine carbonate polymer, a polyacrylate, a polymethacrylate, polylactic acid, polyglycolic acid, and combinations thereof.

33. The article of any one of claims 28 to 32, wherein the article comprises a medical device.

34. The article of claim 32, wherein the medical device comprises one or more of an angiography catheter, an angioplasty catheter, a urology catheters, a dialysis catheter, a Swan-Ganz catheter, a central venous catheter, a peripherally inserted central catheter, a catheter connector, a dialysis membrane, medical tubing, a wound care article, and orthopedic article, a neural implant, a film, a drape, a biosensor, a

dental implant, a heart valve, a heart by-pass machine, an extracorporeal blood device, a nerve conduit, a vascular graft, a stent, an implant or a contact lens.

35. The article of claim 34, wherein the wound care article comprises one or more of a wound closure, a staple, a suture, a mesh, a buttressing device, a suture reinforcement, or a wound care dressing.

36. The article of claim 34 wherein the orthopedic article comprises one or more of a nail, a screw, a plate, a cage, or a prosthetic.

37. The article of claim 34, wherein the neural implant comprises one or more of a drain or a shunt.

38. The article of claim 34, wherein the implant comprises one or more of an occular implant, a chochlear implant, or a breast implant.

39. The article of claim 28 wherein the article is a personal care article, a pharmaceutical article, a health care product article, or a marine article.

40. A method of making the article of claim 28, comprising:

a) making a surface-modifying polymer composition; and

b) forming the article.